IDAHO ENERGY SECURITY PLAN

ENSURING ENERGY SUPPLY AND ACCESS ACROSS THE STATE

2022

IDAHO GOVERNOR'S OFFICE OF ENERGY AND MINERAL RESOURCES

Idaho Energy Security Plan
Executive Summary

The health of Idaho's economy depends on its ability to access reliable energy. While the state's energy industry has a strong track record of maintaining reliable service, emergency events can at times create widespread power outages or fuel shortages and halt major economic activity in the region. Following these events, emergency responders must act safely, swiftly, and methodically to restore service to affected customers and revive economic activity. Energy security planning provides the opportunity to reduce the risk of such emergencies and prepare the state's energy system to respond to disruptions as efficiently as possible.

Minimizing the effects of energy disruptions requires building system resilience against major risks, fostering local talent, and establishing mutual aid partnerships. Restoring energy accessibility after a disruptive event is a complex task, and a speedy restoration requires significant logistical expertise, including skilled workers and specialized equipment. Major risks to the state's energy system include natural disasters like storms, wildfires, and droughts; infrastructure failures due to compromised equipment, accidents, cyberattacks, or human error; and physical attacks. Certainty in energy provision and access requires the consistent ability for stakeholders to meet energy demand despite these risks and supply energy to Idahoans when they need it.

The Idaho Energy Security Plan (The Plan) aims to provide critical information to support and connect emergency management stakeholders and outlines how communication of this information will be executed in the event of a disruption. Specifically, The Plan:

1. Describes the critical elements and identifies the stakeholders of the current energy system in Idaho.
2. Delineates the steps of how to respond to an energy emergency.
3. Reviews historical energy disruptions, their causes, and responses to them.
4. Identifies strategies for building energy resiliency.

The Plan highlights the importance of accurate, consistent, and spatial information on energy disruptions; local stakeholder engagement in preparedness management; and regional knowledge sharing on cyber and physical space protection. Having access to a secure spatial database with critical energy infrastructure, including local energy projects that are privately operated as well as utility and industry-provided data, could support further analysis and enhance resilience planning in Idaho. Furthermore, improvements in energy efficiency will help reduce energy demand and minimize the impact of energy outages. Finally, continued participation in emergency response exercises in Idaho and neighboring states will enhance response and prevention and help stay up to date with modern cyber and physical protection approaches.

The Plan aggregates state and national level information that is publicly available. For more details, please see the document references. In particular, the Idaho Emergency Operation Plan, Idaho Energy Landscape, and Idaho Hazard Mitigation Plan (updated in 2020 with dam failure) are valuable for understanding the state's energy system and the risks associated with that system.

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Glossary

Several technical terms are used throughout The Plan and are defined below for reference and clarity. These definitions have been adopted from Department of Energy (DOE), National Association of State Energy Officials (NASEO), and other major energy security related organizations.

Energy system terms:

BTU – British thermal unit, a measure of quantity of heat that is equal to the amount of heat required to raise the temperature of one pound of water by one degree.

Energy – Power derived from the utilization of physical or chemical resources. In this report, energy includes electricity (and resources used to generate it), natural gas, petroleum, and other liquid fuels. Each resource is referred to specifically when appropriate, whereas the term energy is used specifically when discussing all sources of power.

Energy demand – Energy consumed by human activity.

Spatial information - Data which are representative of a specific, geographic location on the surface of the earth.

Resilience and assurance terms:

Energy assurance planning – System planning to provide robust, secure, and reliable energy infrastructure that is also resilient – able to restore services rapidly in the event of any disaster.

Energy Security - The uninterrupted availability of energy sources at an affordable price. Energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. Short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance. Energy security provides a forum for discussing energy data collection and analysis issues and energy assurance.

Resiliency - The ability of energy systems and operations to minimize service interruptions, respond effectively to an energy emergency, and recover quickly from damage.

Cybersecurity - The protection of computer-based systems such as hardware, software, and data from cyberthreats.

Terms related to energy outages:

Energy emergency - An emergency resulting from an energy supply crisis, economic impacts, widespread energy distribution interruptions, and/or energy infrastructure damage.[1]

Emergency or unusual power outage – Power outages that are reported on the OE-417 form and include events when major interruptions or impacts to infrastructure have occurred.

[1] U.S. Department of Energy, Directives Program, Office of Management, DOE O 151.1 Chg1, Comprehensive Emergency Management System, https://www.directives.doe.gov/directives-documents/100-series/0151.1-BOrder-d-chg1-minchg

Critical infrastructure - Systems and assets, whether physical or virtual, so vital to the U.S. that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.[2]

Key resources - Publicly or privately controlled resources essential to the minimal operations of the economy and government.[3]

Physical attack - An attack on any part of a system suspected of being a deliberate attack or sabotage that disrupts system operations or has the intent to harm the national security of the U.S.[4] The attacks included in OE-417 are those that caused major interruptions or impacts to critical infrastructure facilities or to operations.

Energy disruptions due to natural disasters - Disruptions that occur due to severe weather (thunderstorms, ice storms, etc.) or natural disasters (wildfires, hurricanes, floods, tornadoes, solar activity, etc.).

Islanding - Also referred to as Electrical System Separation, where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system.

Load shedding - Electric load reduction to avoid excessive load on the generating plant. It is reported in the OE-417 if firm load shedding of 100 Megawatts or is under emergency operational policy.

Cyberattack - An event occurring on or conducted through a computer network that actually or imminently jeopardizes the integrity, confidentiality, or availability of the energy system. An Information Technology (IT) cyber event is a cyberattack on the business systems/networks. An Operational Technology (OT) cyber event is a cyberattack on systems/networks of industrial control systems (ICS) including Supervisory Control and Data Acquisition (SCADA) and other control system configurations.

[2] Critical Infrastructures Protection Act of 2001; 1016(e) of the USA PATRIOT Act of 2001 (42 U.S.C. 5195c(e)). U.S. Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response, "Electric Disturbance Events (OE-417) Annual Summaries"

[3] Homeland Security Act of 2002 (6 U.S.C. 101(12)).

[4] U.S. Department of Energy, Office of Electricity. OE-417 Electric Emergency Incident and Disturbance Report, https://www.oe.netl.doe.gov/docs/OE417_Form_Instructions_05312021.pdf

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Idaho Energy System

Energy Consumption and Production

Idaho consumes 553 trillion BTUs or 162 billion kilowatt hours (kWhs) of energy per year.[5] The industrial sector consumes the largest portion of that energy, followed closely by the transportation and residential sectors. Energy provision can be split into three major categories based on the type of energy: electric power (or electricity), petroleum, and natural gas.

Key Energy Security Planning Considerations:[5]

- Hydroelectric power supplies about 60% of Idaho's in-state electricity.
- Petroleum use accounts for 34% of Idaho's total energy use and Idaho is among the 10 states with the lowest total petroleum consumption; however, per capita petroleum use is near the national average.
- All petroleum product supply is provided from out-of-state refineries through the pipeline network. Southern Idaho is supplied from refineries located in Salt Lake City, Utah and Northern Idaho is supplied by refineries in Billings, Montana predominantly.
- 50.9% of Idaho households use natural gas as their primary source for heating their homes, fuel oil supplies 1.5%, electricity 34.4%, propane 5.2%, and other 8%.

Electric power consumed in Idaho is produced both in and out of the state with transmission lines most densely populating the southern portion of the state (**Figure *1* and Figure *2***). Over 70% of electricity consumed in Idaho comes from in-state sources like hydropower, wind, solar, and others. The remaining portion of electricity consumption in Idaho comes from neighboring states like Wyoming, Montana, and Utah, and is generated from hydropower, wind, natural gas, coal, and other sources. The key components of Idaho's electric power system include power generation (for example, a dam, wind turbine, solar panel, or coal power plant), transmission lines, and transformers that convert the power transported to the appropriate voltage for transmission and later for use and consumption. Each of those elements are critical for energy resilience and assurance.

[5] U.S. Energy Information Administration. "2021 Idaho State Energy Profile". https://www.eia.gov/state/print.php?sid=ID

Box 1. Electric Power Critical Resilience Elements:

- Local power generation
- Transmission and power line infrastructure
- Reliable energy access to regional electric power
- Diversity of supply and distributed generation

Electric power production and access are supplied by investor-owned utilities (IOUs) as well as rural cooperative and municipal utilities. Idaho Power, Rocky Mountain Power, and Avista are the electric IOUs that serve most of Idaho and are regulated by the Idaho Public Utilities Commission (PUC). Rural electric cooperatives and municipal power utilities in Idaho are represented by the Idaho Consumer-Owned Utilities Association (ICUA). These not-for-profit utilities are self-regulated by elected boards of directors and city councils. They provide power at-cost to their members and include; Northern Lights Inc., Clearwater Power Company, Idaho Falls Power, Kootenai Electric Co-op, City of Burley, Fall River Electric Co-op, and others.

Box 2. Petroleum Critical Resilience Elements:

- Electric-powered pumping stations
- Non-domestic

Petroleum is the primary energy source for the transportation sector in Idaho, and its accessibility is of crucial importance for the functioning of the state. The petroleum consumed in Idaho is imported through two pipelines: the Yellowstone pipeline and the Northwest Products pipeline (**Figure 3**). The movement of petroleum products through the pipes is operated with the help of the electric-powered pumping stations. Based on the 2020 Resiliency Assessment[6], the critical points in a functioning oil pipeline are the pumping stations. Furthermore, Idaho's petroleum is mostly imported, which can pose a risk to the resilience of the state's energy. The only exception is the 60 million gallons/year[7] of ethanol production by Pacific Ethanol in Burley, Idaho, which is blended into petroleum products. Box 2 presents critical elements to consider for resilience in petroleum supply.

Box 3. Natural Gas Key Resilience Elements:

- Gas production out-of-state
- Gas leakage prevention

Natural gas is the largest source of energy used in Idaho based on total BTU energy consumption[8], but part of that natural gas is used for electricity production. It is primarily used in industry and is the main source of fuel for heating Idaho's industrial, commercial, and residential sectors. Some of the significant elements of the natural gas system include natural gas production (extraction and processing), transmission (in Idaho, using pipelines), and distribution (with storage stations). The natural gas used in Idaho mostly comes from the Rocky Mountain production areas and Canada. It is transported through pipelines or stored in Washington, Idaho, or the border between Utah and Wyoming. The main natural gas pipeline in Idaho is the Williams Northwest pipeline and the second-largest pipeline is TransCanada's Gas Transmission Northwest (GTN) System pipeline (**Figure 4**). Box 3 provided information on key elements of resiliency for natural gas supply.

[6] U.S. Cybersecurity and Infrastructure Security Agency. "Regional Resiliency Assessment Program." https://www.cisa.gov/regional-resiliency-assessment-program.

[7] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

[8] U.S. Energy Information Administration. "Idaho Profile Overview". https://www.eia.gov/state/?sid=ID#tabs-1.

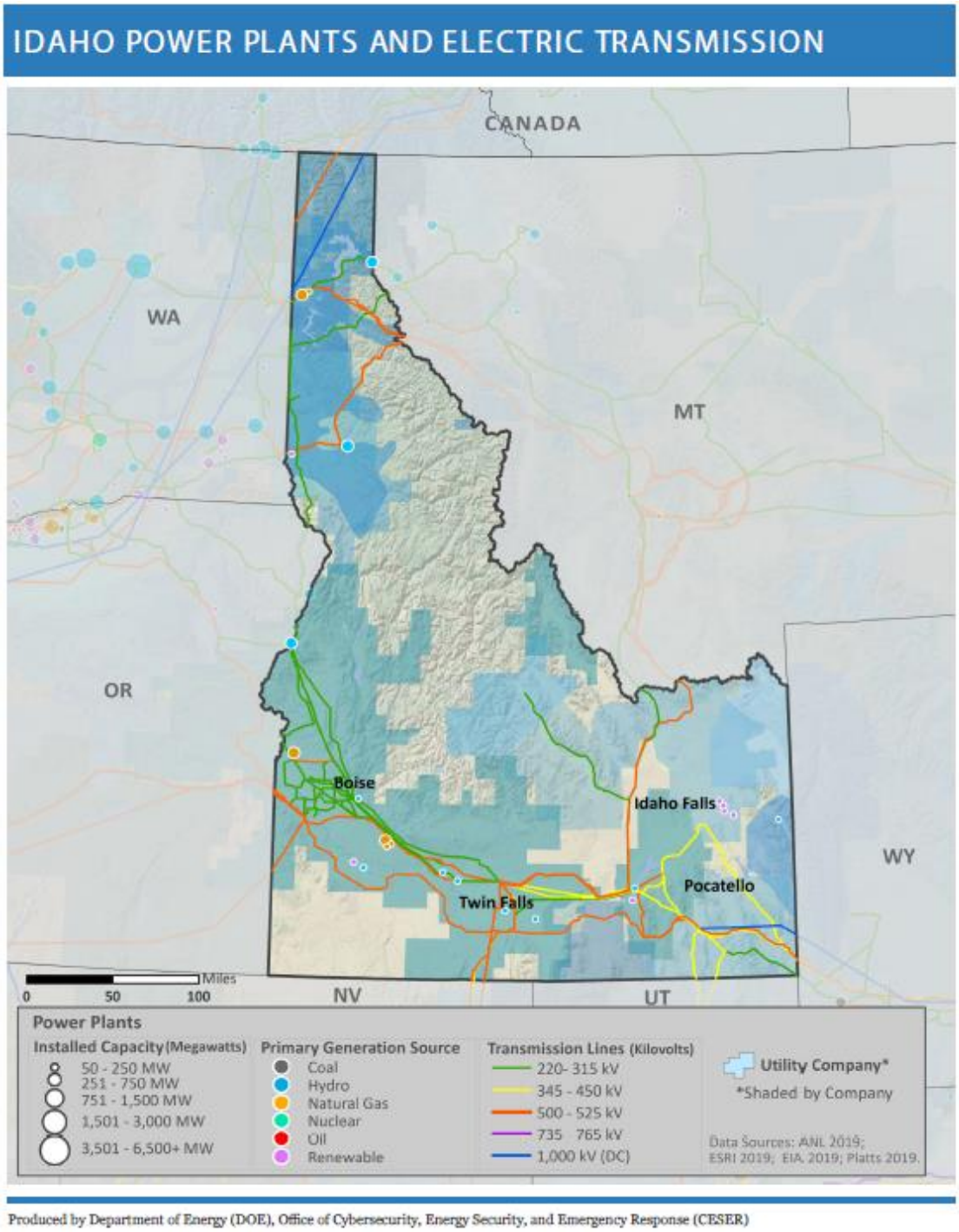

Figure 1. Power Plants and Electric Transmission in Idaho[9]. This figure depicts power plants, including capacity and generation source, and electric transmission lines within the state. *Adapted from:* The U.S. Department of Energy (DOE), Office of Cybersecurity, Energy Security, and Emergency Response (CESER). **Note*: Nearly all of the 500 kV depicted in south Idaho in the figure is not yet constructed and there are a few renewable projects that are also not depicted.

[9] U.S. Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. "State and Regional Energy Risk Profiles - Idaho". https://www.energy.gov/ceser/state-and-regional-energy-risk-profiles.

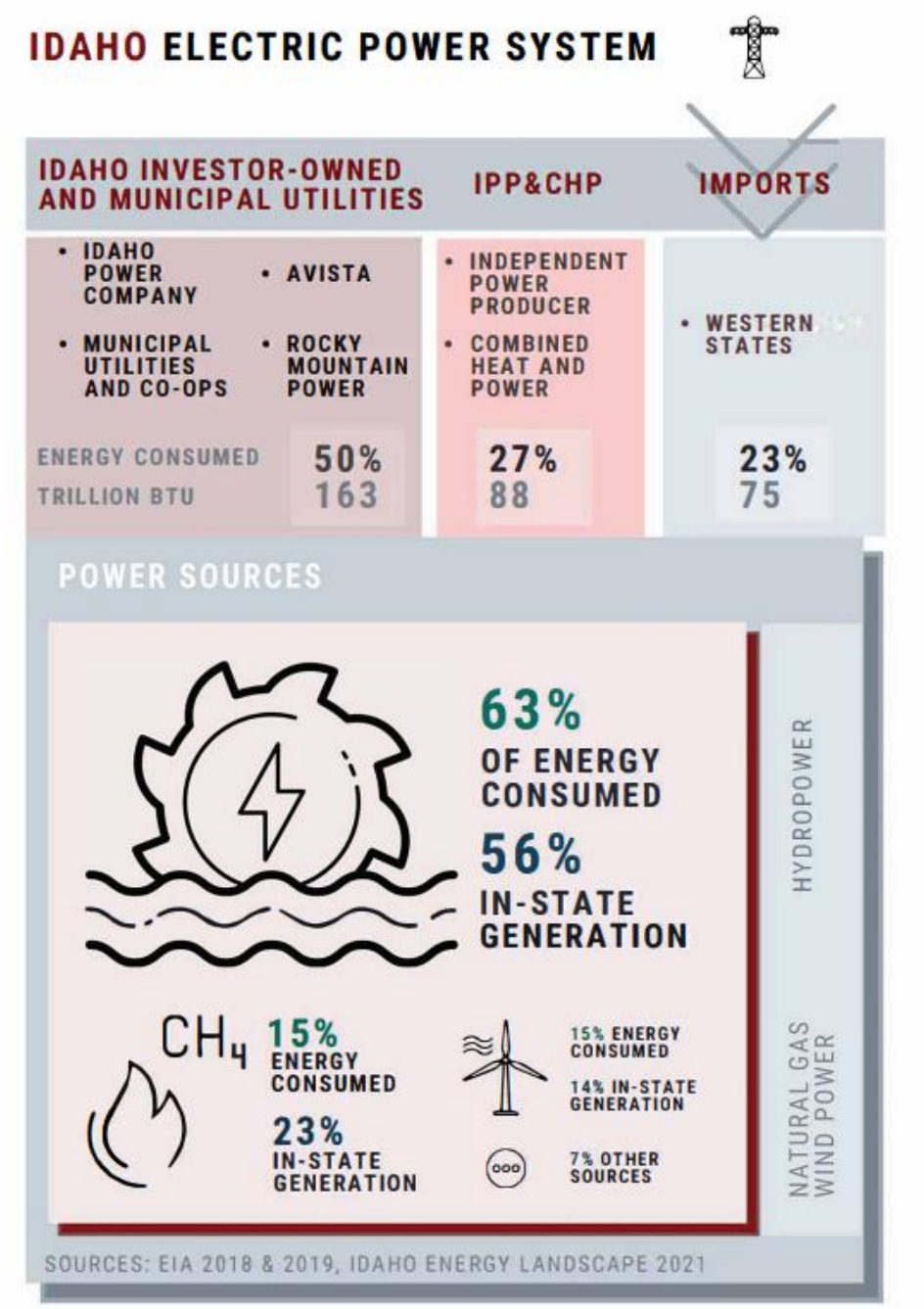

Figure 2. Idaho Electric Power System. The figure depicts Idaho's electricity supply and where it is sourced from. Icon size for each energy source corresponds to the relative amount of contribution of that energy source to the grid.[10]

[10] U.S. Energy Information Administration. "2021 Idaho State Energy Profile", https://www.eia.gov/state/print.php?sid=ID; Idaho Governor's Office of Energy and Mineral Resources, 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

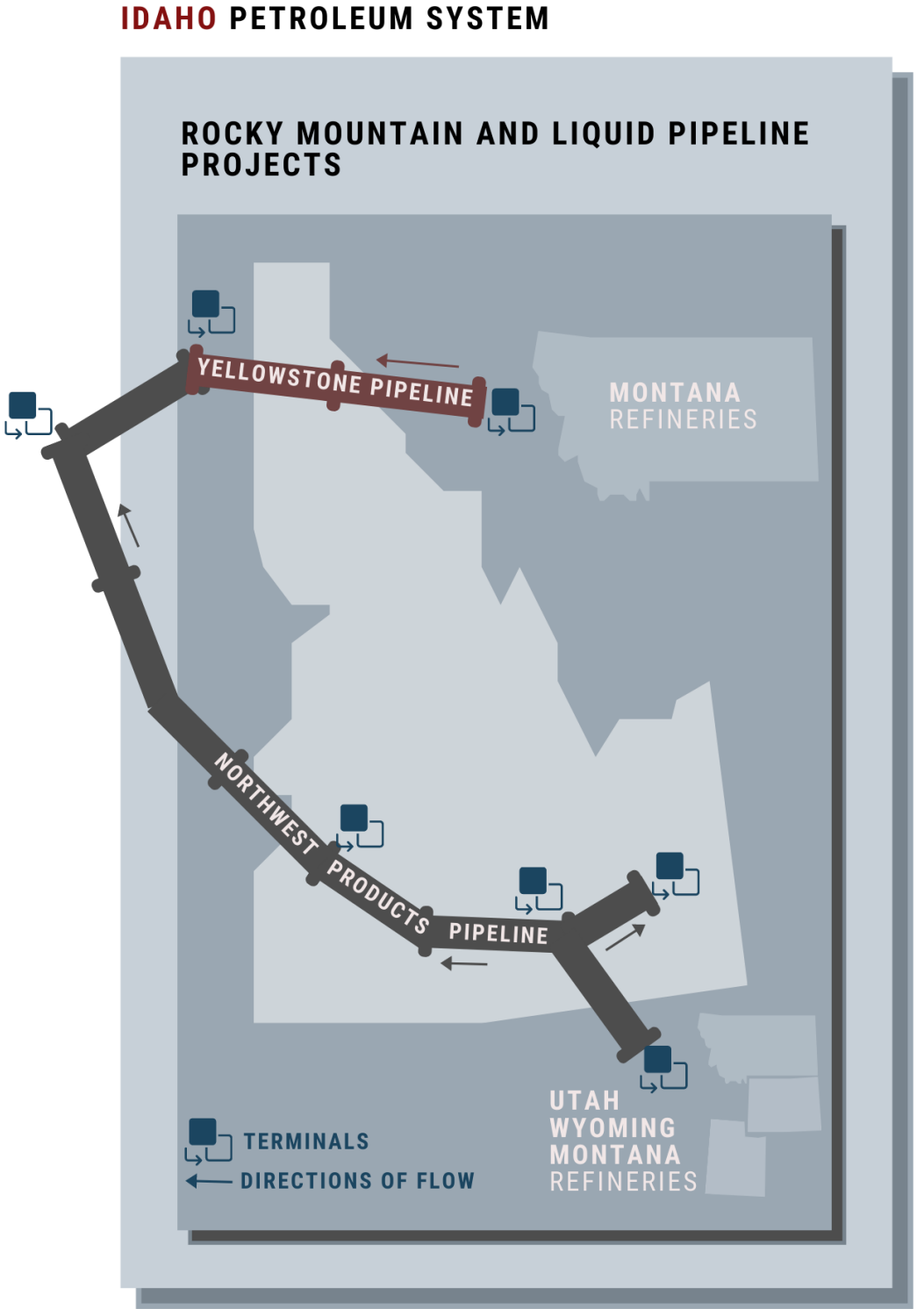

Figure 3. Idaho Petroleum System[11].This figure depicts Idaho's petroleum pipeline infrastructure throughout the state, including terminals and flow directions, and refineries in neighboring states.

[11] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.; U.S. Cybersecurity and Infrastructure Security Agency, "Regional Resiliency Assessment Program" https://www.cisa.gov/regional-resiliency-assessment-program.

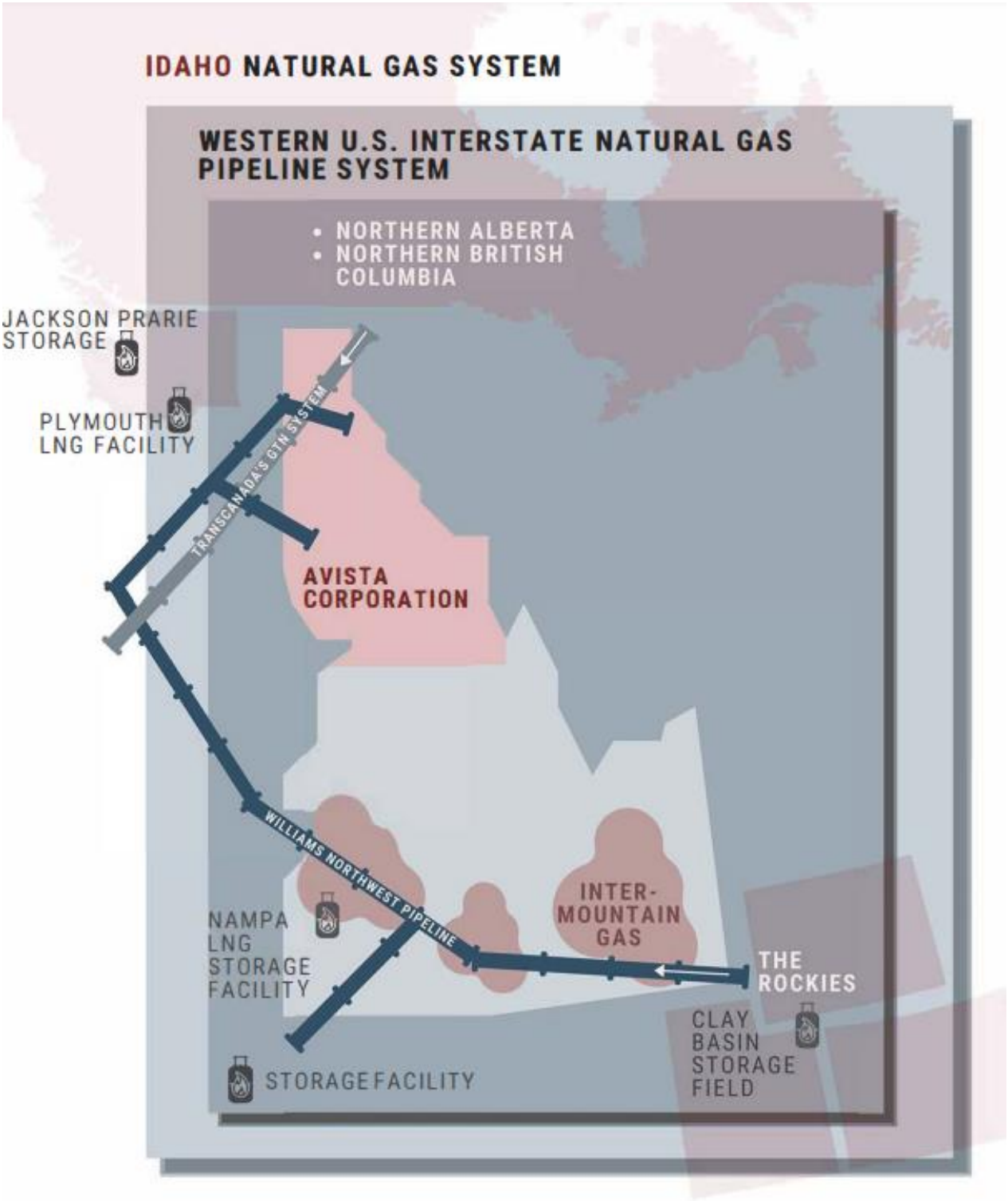

Figure 4. Idaho Natural Gas System[12]. This figure depicts Idaho's natural gas pipeline infrastructure throughout the state, including storage facilities, and storage fields in neighboring states. Note: "LNG" stands for Liquid Natural Gas, "GTN" stands for "Gas Transmission Northwest" and "The Rockies" represents storage fields in Utah, Wyoming, and Colorado.

[12] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

Overall, Idaho produces 32% of the energy that it consumes and imports all petroleum products.[13] To ensure energy access and availability, reliable transmission lines and pipelines to Utah, Montana, and Wyoming should be maintained, and in-state energy production should continue to be encouraged. For more details on the current state of energy production and consumption in Idaho, please see **Appendix A** and the Idaho Energy Landscape.

Idaho Risk Profile

Expected threats or risks to Idaho's energy supply forms the basis of all energy security activities across the state. According to the U.S. Department of Energy's (DOE) State of Idaho Energy Sector Risk Profile[14] (Idaho Risk Profile), past energy supply risks in Idaho have typically corresponded with weather-related outages or equipment- or human error-caused outages. Beyond historic threats, new risks to Idaho's energy supply are emerging, such as increased frequency of extreme weather events and cyberattacks. The Idaho Risk Profile specifies that the greatest natural disaster risks in Idaho are winter storms and extreme colds. Other natural hazards are wildfires, thunderstorms and lightning, and floods (**Figure 5**).

Energy transmission, like energy supply, is also subject to diverse risks and hazards. Transmission line faults and overloads have caused the largest number electric power outages in Idaho (**Figure 5**). The Idaho Risk Profile also evaluates risks to petroleum transportation and natural gas transmission, finding that the greatest risks to these systems are derailment, collision, or corrosion; and material and weld failures, respectively (**Figure 6**).[14] More information on the Idaho Risk Profile can be found in **Appendix B**.

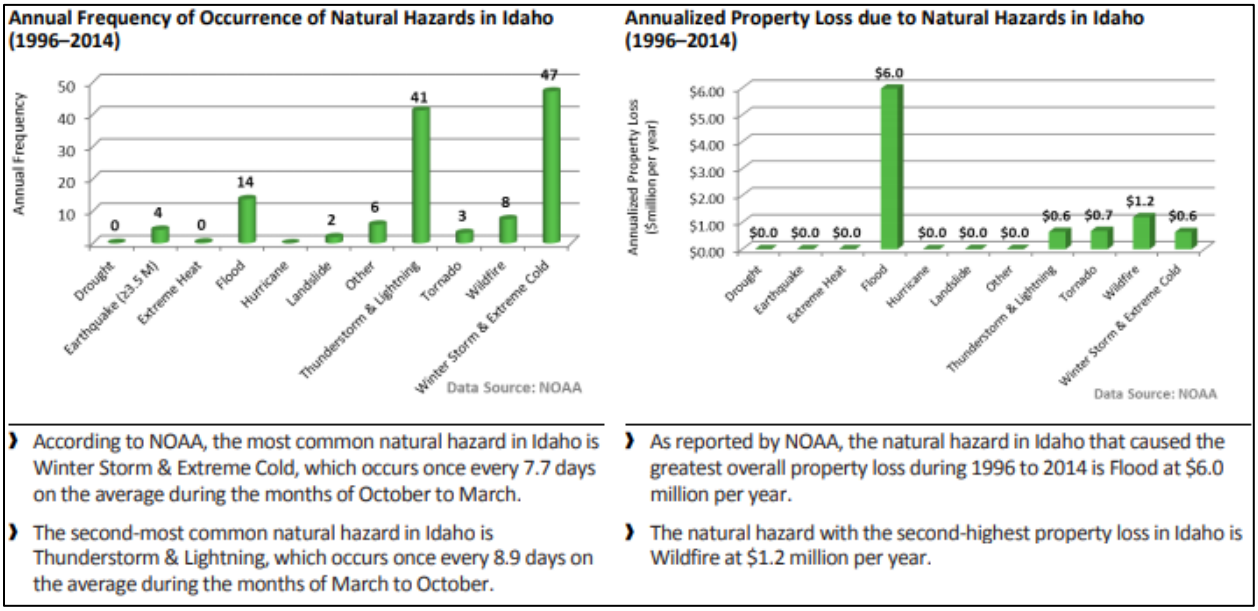

Figure 5. Natural Hazards in Idaho.[14] This figure depicts Idaho's annual frequency of occurrence of natural hazards and annualized property loss due to natural hazards. A combination of equipment failures, severe weather events, and deliberate cyber- and physical attacks pose risks to every part of Idaho's energy system, including energy feedstocks, generation, transmission, and distribution.

[13] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

[14] U.S. Department of Energy, "State of Idaho Energy Sector Risk Profile" [hereinafter Idaho Risk Profile], https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf.

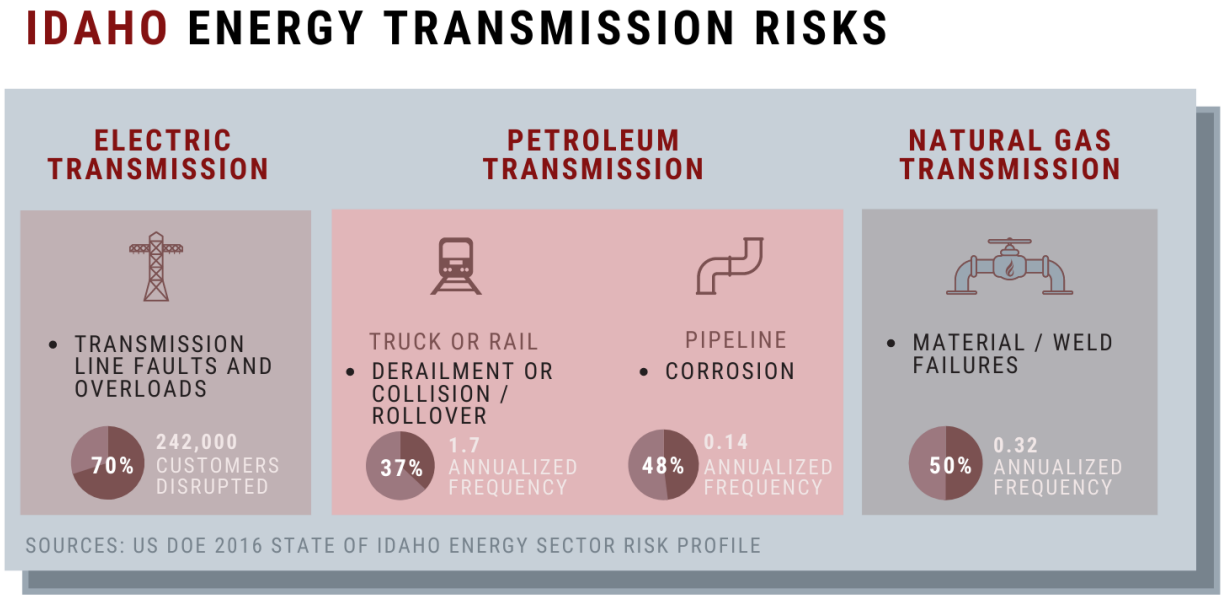

Figure 6. Idaho Energy Transmission Risks.[15] This figure depicts Idaho's major electric, petroleum, and natural gas transmission risks. The values are based on past transmission disruptions.

Transmission and Resource Adequacy

Idaho's growing energy demand coupled with the need to move large quantities of electricity makes access to transmission capacity critical to maintaining system resilience. The State of Idaho, through the Governor's Office of Energy and Mineral Resources (OEMR), participates in state and regional transmission planning activities through investor-owned utility integrated resource planning processes[16], the Bonneville Power Administration's transmission planning process[17], NorthernGrid's regional transmission planning process[18], and other Western Interconnection transmission discussions. Participation in various transmission planning activities allows the State to support transmission projects that build physical redundancy in Idaho's energy system without unduly impacting ratepayers. OEMR supports critical transmission projects, such as the Boardman to Hemingway and Gateway West transmission projects, that will achieve these objectives.

In addition to access to adequate transmission, utility and regional resource adequacy is an important component of energy security. Recent trends in decommissioning thermal plants and increasing renewable integration have enhanced concern over the region's ability to maintain

[15] Idaho Risk Profile, https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf.
[16] Idaho Power Company. "Our 20-year Plan". https://www.idahopower.com/energy-environment/energy/planning-and-electrical-projects/our-twenty-year-plan/; Avista. "Integrated Resource Planning". https://www.myavista.com/about-us/integrated-resource-planning; PacifiCorp. "Integrated Resource Plan". https://www.pacificorp.com/energy/integrated-resource-plan.html.
[17] Bonneville Power Administration. "Transmission Plan". bpa.gov/transmission/CustomerInvolvement/TransmissionPlan/Pages/default.aspx.
[18] NorthernGrid. "Purpose". https://www.northerngrid.net/northerngrid/purpose/.

resource adequacy. The Northwest Power and Conservation Council (Council) measures resource adequacy in the Northwest (Idaho, Montana, Oregon, and Washington). Analysts study thousands of potential scenarios, including the streamflow variation to weather, which drives power demand, and the potential for generation or transmission line outages that could keep power from being produced or delivered. If more than 5% of those scenarios result in a power shortage, the region has a resource deficit.

The most recent study completed by the Council shows that demand for energy is already starting to outpace supply, and the Northwest could experience capacity shortages as soon as 2022.[19] In an effort to manage resource adequacy concerns, the Northwest Power Pool is developing the Western Resource Adequacy Program to address the segmented nature of the region's power grid, where many different entities are responsible for different portions of the grid and have historically completed resource planning on an individual basis. By enhancing regional collaboration on resource adequacy, western states can define how much readily available regional power is needed to meet future demand and explore ways to be more efficient with existing resources, such as by sharing capacity so that surplus in one area can be used to serve a deficit in another.

Idaho Emergency Response to Energy Disruptions

In energy security planning, strong engagement with local stakeholders is critical to preventing energy disruptions and efficiently responding to crises. While national entities may provide financial, regulatory, and educational support for energy security planning and response, local entities have on-the-ground knowledge that is crucial for effective emergency management. Regular and constructive communication between national, regional, state, and local stakeholders is vital to optimal emergency preparedness, prevention, and response. Furthermore, it is important to develop the expertise of internal staff in all positions responsible for emergency management.

Energy Emergency Response Steps

An energy emergency can happen at different scales – impacting a single community or spanning across an entire state. If a disruption is limited to energy and energy-specific infrastructure without damaging other systems, the energy provider, such as a utility company or a pipeline operator, will be the first to respond and restore energy supply and access (**Figure 7**). If the resources of an energy provider are overwhelmed, or if the disruption is causing outages for more than 500 customers, the providers are encouraged to inform local and state stakeholders about the incident. The energy providers are obligated to formally report the disruption if there are any fatalities/injuries[20] or if there is a need to involve police and other security officials.

Energy emergencies are of particular concern if they threaten critical infrastructure or key resources. According to the U.S. Cybersecurity and Infrastructure Security Agency[21], 16 sectors are classified as critical infrastructure in the U.S. and are listed in **Appendix C**. Depending on the

[19] Northwest Power and Conservation Council. "The 2021 Northwest Power Plan". https://www.nwcouncil.org/2021-northwest-power-plan

[20] Commission Order No. 35095. "Adopting the Commission's Safety Regulations by Order", *available at* https://puc.idaho.gov/Fileroom/PublicFiles/Multi/GNR/GNRU2101/OrdNotc/20210630Order_No_35095.pdf

[21] U.S. Cybersecurity and Infrastructure Security Agency, "Critical Infrastructure Sectors," https://www.cisa.gov/critical-infrastructure-sectors.

scale and infrastructure that was (or can be) impacted, different agencies are responsible for responding to an incident. The following figures illustrate the general process of response for an energy emergency incident in Idaho (**Figure 8**). To respond to an emergency, Idahoans are encouraged to contact local utility provides and keep up to date with current emergency information (**Figure 7**). Public-specific Appendices outline the emergency contact order and the contact information that can be useful in case of an emergency (**Table D-** ***1.*** Energy Emergency Contact Listof **Appendix D**. Public-specific Appendices Energy stakeholders should contact energy emergency responders as appropriate based on the affected area and critical infrastructure or key resources that may be threatened or damaged.

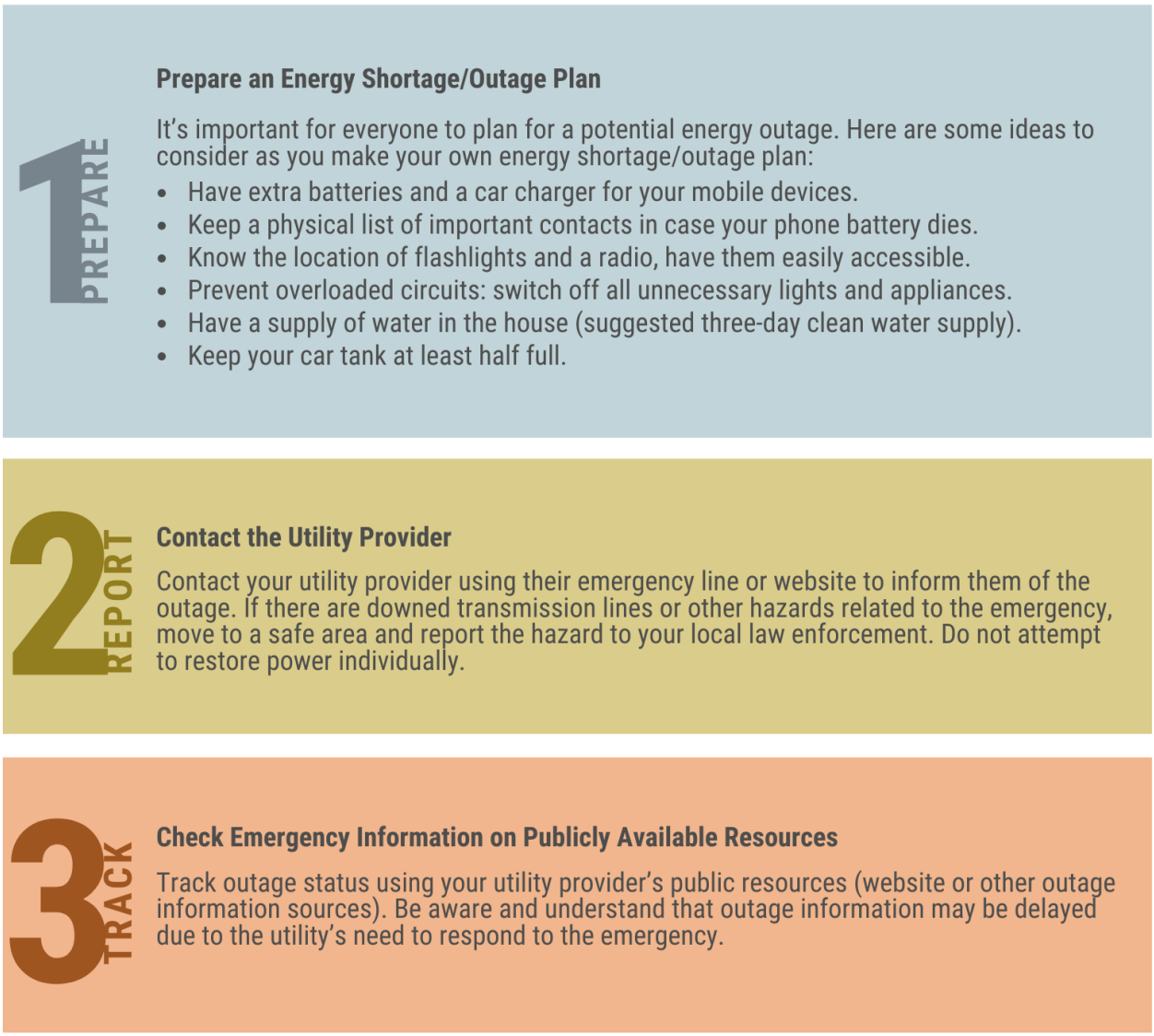

Figure 7. Energy Emergency Response for Idahoans. This figure illustrates steps Idahoans can take to prepare for, respond to, and track energy outages. Please refer to **Appendix D**, **Table D-1** for contact information that can be useful during an energy emergency.

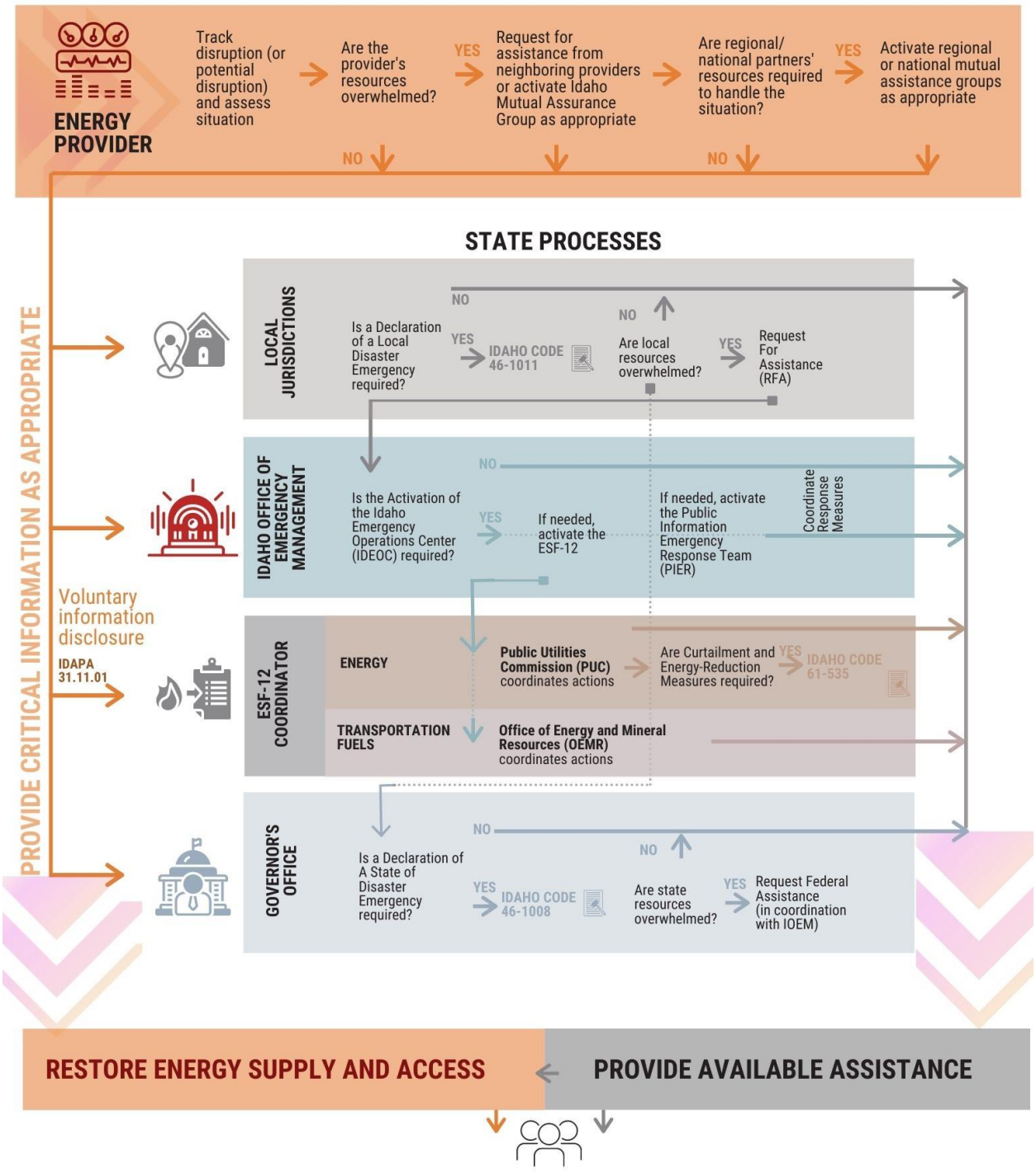

Figure 8. Energy Emergency Decision Tree. This figure illustrates the general process of response for key emergency managers during an energy emergency incident in Idaho. Idaho's emergency response strategy follows a bottom-up approach, in which additional response assistance (from the state or federal government) is only available once local responders are overwhelmed.

Idaho Response Center (IRC)[22]

When disaster emergency conditions of any kind appear likely to exceed the combined capabilities of a local jurisdiction and mutual aid compact signatories, local governments will request the support of the state through the IRC managed by the Idaho Office of Emergency Management (IOEM). State resources coordinated via the IRC are supplemental to local resources (**Figure 9**).

The IRC evaluates local requests for assistance based on the level of local resource commitment and availability of state resources. Any and all state resources are committed through the IRC. If the Governor determines local assets and resources have been fully utilized and state resources are available, he/she will authorize their commitment to the emergency. The Governor may then proclaim a "State of Emergency" and the provisions of the Idaho Emergency Operations Plan (IDEOP)[23] will be invoked. More information on the IDEOP can be found in **Appendix E**.

Figure 9. Idaho Response Center (IRC) working to respond to an emergency.

State disaster relief can be provided to local governments without a declaration of a "State of Emergency" when such resources are needed for life saving missions or to relieve suffering and hardship. If state capabilities are overwhelmed, the state can request assistance from other states under provisions of the Emergency Management Assistance Compact (EMAC)[24] or any existing mutual aid compacts. Requests for EMAC assistance will be coordinated through the IRC.

If capabilities (financial or operational) of state government are overwhelmed, or if an eminent threat is such that it will overwhelm available state resources, the Governor can request federal disaster emergency assistance. In the case of a disaster in which additional disaster assistance is required beyond that generally administered by individual federal agencies, the Governor may make a request for federal emergency, major disaster, or fire suppression assistance under the authority of the Stafford Act, PL 93-288 as amended, to the President through the Region-X Director of the Federal Emergency Management Agency (FEMA).

[22] The Idaho Response Center, or IRC, may be referred to as the Idaho Emergency Operations Center (EOC), or IDEOC. The IRC replaced the EOC in 2021.

[23] Idaho Office of Emergency Management, "Idaho Emergency Operations Plan", https://ioem.idaho.gov/wp-content/uploads/sites/57/2018/12/2017-IDEOP.pdf.

[24] EMAC. https://www.emacweb.org/index.php/learn-about-emac/what-is-emac.

Communication During an Emergency

Beyond communicating with the agencies or groups that provide emergency response and support, communicating with the public during an energy emergency is crtiical. Preparing a press release during an emergency can be challenging due to staffing and other constraints. Readily available templates for press releases will help streamline communications without overburdening emergency responders. The press release template's purpose is to answer the basic questions: who, what, where, when. The state agency-specific **Appendix F** includes recommendations for steps that state agencies can take to communicate about an emergency and provides templates for press releases.

Idaho Energy Stakeholders

Emergency Coordinators and Responders

The organizations involved in preventing, responding to, and mitigating energy disruptions are illustrated in the energy emergency decision tree (**Figure 8**).

Idaho Governor's Office of Energy and Mineral Resources (OEMR)

- OEMR is the state's ID-ESF #12 Primary Agency, and it supports the PUC in performing ID-ESF #12 responsibilities.
- OEMR has primary responsibility for emergency transportation fuel coordination and the Idaho Emergency Fuel Shortage Plan (**Appendix G**).
- OEMR, in coordination with the Idaho Strategic Energy Alliance (ISEA), is also responsible for the Idaho Energy Security Plan.
- PUC and OEMR work closely with state and federal agencies, including IOEM and DOE, in sharing energy emergency and shortage information and seeking technical support.

Idaho Office of Emergency Management (IOEM)

- IOEM is the state's emergency management agency tasked by the Idaho Legislature with assisting the 44 counties and four Tribes in managing man-made and natural disasters in the state.
- Key to the agency's role is developing and updating the IDEOP. The IDEOP delineates emergency response procedures, responsibilities, and lines of authority.
- The format of the IDEOP aligns with FEMA's National Response Framework[25] by using a functional approach to providing assistance. In this approach, the Idaho Emergency Support Functions (ID-ESF), Idaho Support Annexes (ID-SA), and Idaho Incident Annexes (ID-IA) have been assigned to lead coordinating agencies with other departments and organizations in supporting roles. Identified ID-ESF Coordinating Agencies are responsible for developing, periodically reviewing, and revising their identified functional annex(s) of the IDEOP. ID-ESF Coordinating Agencies must coordinate with the Idaho Response Center (formerly known as the Idaho Emergency Operations Center), applicable Primary and Support agencies, and the associated tasks identified in their functional annex(s) during emergency operations.
- IOEM is accredited by the Emergency Management Accreditation Program (EMAP) and is a division of the Idaho Military Division.
- IOEM also produces a Hazard Mitigation Plan which serves to identify hazards affecting Idaho, analyze risks and vulnerabilities, determine possible losses, and develop strategies to reduce impacts. More information on this plan can be found in **Appendix H**.

[25] Federal Emergency Management Agency, "National Response Framework", https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response.

Idaho Public Utilities Commission (PUC)

- PUC is the state's Coordinating Agency for ID-ESF #12 (Energy). ID-ESF #12 coordinates activities to assist in the restoration and protection of Idaho's critical electricity generation, transmission and distribution infrastructure, and fuel supply delivery.
- Additionally, ID-ESF #12 gathers, assesses, and shares information on energy system damage and estimations of the impact of energy system outages with affected areas.
- ID-ESF #12 also works closely with and aids in meeting requests for assistance from local energy officials, energy suppliers, and deliverers to facilitate restoration and protection efforts.

Mutual Assistance Groups

Mutual assistance refers to voluntary partnerships among utilities in the same region, where utilities can get help from other utilities in the same mutual assistance network. Utilities may also belong to two or more regional networks (**Figure 10**). Partnerships such as these save utilities from having to keep large numbers of emergency crews on staff all the time. Generally, the items that are shared include utility employees and contractors, specialized equipment, supplies, and information.[26]

Idaho Mutual Assistance Agreement (IMAA)

- IMAA's Agreement defines the terms and conditions for voluntary assistance and states that in case of an emergency one of the 18 company signatories can request other parties for assistance, either verbally or in writing.
- The IMAA also formed the Idaho Mutual Assistance Group (IMAG).

Northwest Mutual Assistance Agreement (NWMAA)

- NWMAA's Agreement defines the terms and conditions for voluntary assistance and maintains communication between members for emergency planning and incident response.
- If a major emergency occurs in the Pacific Northwest, it is expected that the signatories provide assistance. All three of Idaho's IOUs are members.

Western Region Mutual Assistance Group (WRMAG)

- WRMAG's Agreement states that in case of an emergency one of the signatories can request assistance from other parties, either verbally or in writing. This includes Bonneville Power Administration (BPA), Idaho Power Company, Intermountain Gas Company, PacifiCorp, and many others, totaling nearly 50 utilities.
- The group is convened if two or more states require mutual assistance support and the resources needed are greater than what two utilities can coordinate.

National Mutual Assistance Agreement (NMAA)

- NMAA is only activated if additional resources are unattainable regionally.
- NMAA is facilitated by the American Gas Association, the American Public Gas Association, the Northeast Gas Association, the Southern Gas Association, and the Midwest Energy Association (MEA).

[26] Edison Electric Institute, "Understanding the Electric Power Industry's Response and Restoration process." http://www.eei.org/issuesandpolicy/electricreliability/mutualassistance/Documents/MA_101FINAL.pdf.

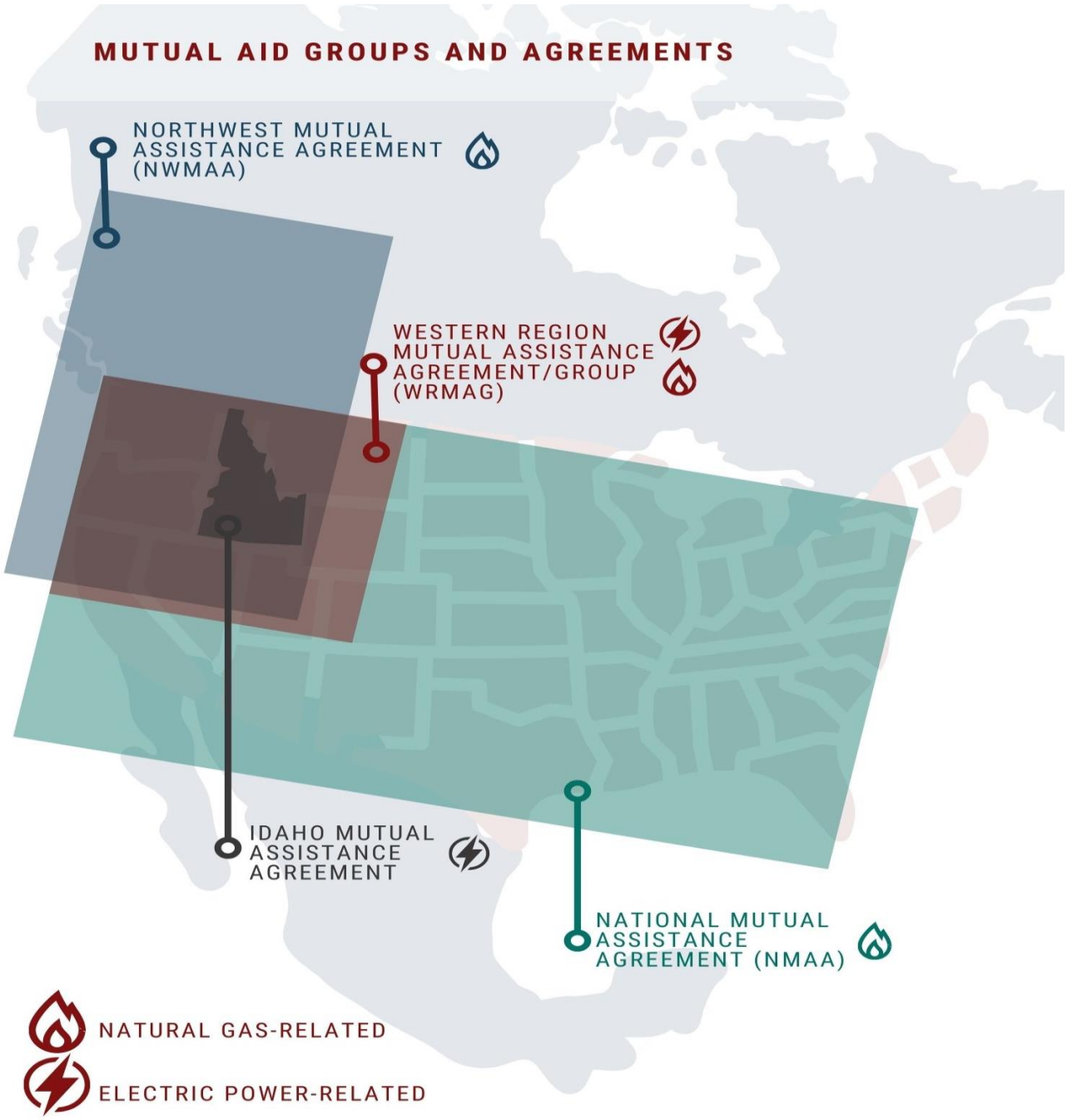

Figure 10. Mutual Aid Groups and Agreements. This figure depicts the geographical areas covered under the various Mutual Aid Groups.

Energy Security Planning Groups & Stakeholders

National, regional, and state energy security planning groups and stakeholders serve as primary resources and critical communicators during an emergency occurrence. The following information lists some key stakeholders and their roles in energy security planning and decision-making.

Federal Emergency Management Agency (FEMA)

- FEMA's National Response Framework includes Emergency Support Functions (ESF) that describe federal coordinating structures that group resources and capabilities into functional areas most frequently needed in a national response, and Support Annexes that describe how support is organized among private sector, non-government organizations and federal partners[27]. FEMA's capstone doctrine, Publication 1, further details the history, mission, and core values of the agency[28].

National Association of State Energy Officials (NASEO)

- NASEO helps to advance national and state energy goals by assisting states in ensuring the energy system is reliable, affordable, and secure. NASEO supports these objectives by delivering state energy policy and program expertise, facilitating peer learning among state energy officials, assessing states' energy security needs, and developing tools and resources for state energy office use.

National Emergency Management Association (NEMA)

- NEMA provides national leadership and expertise in comprehensive emergency management; serves as a vital emergency management information and assistance resource; and advances continuous improvement in emergency management through strategic partnerships, innovative programs, and collaborative policy positions.

North American Electric Reliability Corporation (NERC)

- NERC's major responsibilities include developing standards for power system operations, monitoring and enforcing compliance with those standards, assessing resource adequacy, and providing educational and training resources as part of an accreditation program to ensure power system operators remain qualified and proficient.
- NERC's Electricity Information Sharing and Analysis Center (E-ISAC) provides its members and partners with resources to prepare for and reduce cyber and physical security threats to the North American electricity industry.[29]

State Energy Emergency Assurance Coordinators (EEAC)

- EEAC is a network of state or territory representatives that serve as points of contact for energy emergency communication between states and federal government. EEACs in Idaho are typically the designated ESF #12 representatives, or employees of the OEMR, the PUC, and the IOEM.

[27] FEMA. "National Response Framework". https://www.fema.gov/emergency-managers/national-preparedness/frameworks/response

[28] FEMA. "Pub 1 and Core Values", https://www.fema.gov/about/pub-1.

[29] NERC. "Electricity Information Sharing and Analysis Center". https://www.nerc.com/pa/CI/ESISAC/Pages/default.aspx

U.S. DOE Office of Cybersecurity, Energy Security, and Emergency Response (CESER)

- CESER plays a critical role in maintaining situational awareness, discovering and mitigating cyberthreats, and orchestrating response and recovery operations. CESER's responsibilities are established through various authority statements passed down by both the executive branch and DOE.

Western Petroleum Shortage Response Collaborative (WPSRC)

- WPSRC collaborates with western states to provide education, training, and other emergency preparedness activities to ensure states are prepared to prevent and efficiently respond to potential fuel shortages. WPSRC's primary stakeholders are State Energy Offices and State Emergency Management Agencies. Further information on WPSRC can be found in **Appendix I**.

Balancing Authorities

In Idaho's energy system, IOUs and municipal and cooperative utilities operate energy production, transmission, and distribution to customers in their specified service territory. Idaho's three electric IOUs–Idaho Power, Rocky Mountain Power (a division of PacifiCorp), and Avista–are responsible for electric balancing authority services within their service territory. That means that they are responsible for meeting the energy demand with the corresponding energy supply within their designated electric grid territory (**Figure 11**).[30] The BPA also serves as a balancing authority because it provides power and transmission services to municipal and cooperative utilities in the region and throughout the state of Idaho.

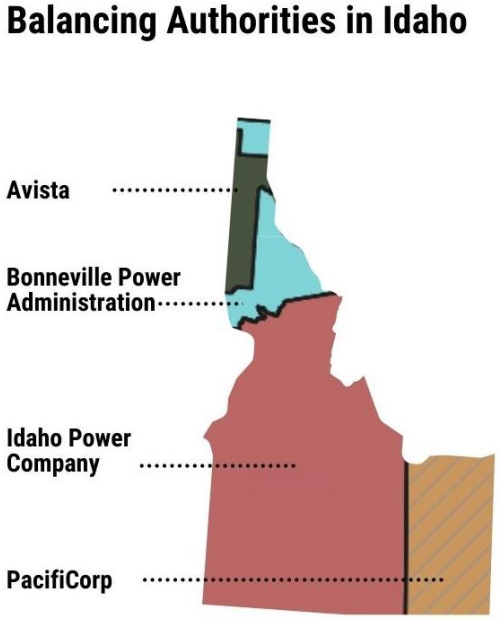

Figure 11. Idaho Balancing Authorities. This figure depicts Idaho's IOU balancing authority services within their service territory. Boundaries are adopted from the Western Electricity Coordination Council (WECC).[30]

Assessment

During and after an emergency, the level of emergency and its consequences should be assessed. Assessing the extent of an emergencies' impact helps streamline emergency response and summarize lessons learned. The extent of an emergency can be measured using Emergency Levels, classified as Levels 1 through 4 (**Figure 12**). Declaring a level of emergency (on the utility, local, or state level) can help communicate response status and describe the current situation to emergency responders and the public.

After an emergency, the incident response team is responsible for documenting the incident as well as meeting with the appropriate parties to discuss lessons learned and other major takeaways from the incident.[31] This document can be known as the after-action report (AAR) or an incident assessment. The purpose of an AAR is to analyze the management or response to an incident,

[30] Western Electric Coordinating Council, "Western Interconnection Balancing Authorities", *available at* https://www.wecc.org/Administrative/Balancing_Authorities_JAN17.pdf.

[31] Idaho Office of Emergency Management, "Emergency Operations Plan", https://ioem.idaho.gov/wp-content/uploads/sites/57/2020/07/2019-Idaho-Emergency-Operations-Plan.pdf

exercise, or event by identifying strengths to be maintained and built upon, as well as identifying potential areas of improvement. Review and assessment questions[32] that can be used for an AAR or incident assessment include:

- Exactly what happened, and at what times? How well did staff and management perform in dealing with the incident?
- Were the documented procedures followed; were they adequate? What information was needed sooner?
- Were any steps or actions taken that might have inhibited the recovery? What would the staff and management do differently the next time a similar incident occurs?
- What was the root cause of the incident and what corrective actions can prevent similar incidents in the future?

Figure 12. Emergency Level Descriptions. This figure provides information to assist in identifying the level of an emergency.

[32] Scarfone et al. 2008, https://csrc.nist.rip/library/NIST%20SP%20800-061r1%20Computer%20Security%20Incident%20Handling%20Guide,%202008-05.pdf.

Past Energy Disruptions

General Trends Across Idaho

Analyzing the average number and duration of outages and their causes helps to understand grid performance and is an important component of energy security planning. Power reliability indicators are one way to evaluate how effective an energy provider is at assuring continuous energy supply. This section focuses on the number and severity of power outages in Idaho between 2013 and 2019.[33] The year 2013 was selected as the starting date because this was the year that EIA-861[34] started collecting the appropriate information from utilities. For clarity, Idaho's IOUs are considered as separate categories from Idaho's cooperative and municipal utilities. Data for Avista's power outages were not available before 2016, thus the growth in customer disruption duration and frequency is not due to a change in operation, but rather due to data availability.

Most power reliability data are presented in System Average Interruption *Duration* Index (SAIDI) and System Average Interruption *Frequency* Index (SAIFI), which are indicators of the duration of outages per customer and the frequency of outages per customer, respectively. Figures **Figure 13** and **Figure 14** below were calculated based on SAIDI and SAIFI. The duration of outages was calculated as the product of SAIDI and the number of customers per utility. Therefore, the duration and SAIDI figures differ as they account for the number of customers experiencing outages.

Idaho Power is the largest electricity provider in the State and serves the largest number of customers in Idaho. Correspondingly, about half of the total number of hours, or duration, of outages are associated with Idaho Power (**Figure 13**). However, in proportion to the number of customers, most other utilities experienced more outages per user (**Figure 14**). Some smaller utilities have experienced major outages due to weather events. For example, the Kootenai Electric Cooperative experienced a long outage due to a windstorm which caused a spike in Idaho's power outage duration in 2015 (**Figure 15**). This spike is evident in the SAIDI figure where "other utilities" were included compared to when they were not (**Figure 16**). Since that 2015 event, Kootenai received and executed a FEMA grant to retrofit their transmission lines by burying them underground. That infrastructure update might explain the decline in duration of outages among cooperative and municipal utilities following 2015.

In 2018, a U.S. customer experienced an average of 1.3 outages and was without power for 5.8 hours, most of which had been caused by major outages.[35] That value can be compared to 1.2 outages and 2.9 hours without power per Idahoan from the same year, which suggests that Idaho has recently experienced fewer and shorter outages than the U.S., on average. That difference can be attributed to Idaho's power system not being significantly affected by major or emergency outage events. On average, an Idahoan experienced 167 minutes (or 2.8 hours) of power outage in 2019 (**Figure 17**).[36]

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[33] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

[34] Form EIA-861, Annual Electric Power Industry Report, and Form EIA-861S (the shortform) collect data from distribution utilities and power marketers of electricity. This survey is a census of all United States electric utilities.

[35] U.S. Energy Information Administration, "U.S. customers experienced an average of nearly six hours of power interruptions in 2018", https://www.eia.gov/todayinenergy/detail.php?id=43915.

[36] U.S. Energy Information Administration, "Form EIA-923 detailed data with previous form data (EIA-906/920)", https://www.eia.gov/electricity/data/eia923/; "Table 11.6 CAIDI values of U.S. Distribution System by State, 2013-2020", https://www.eia.gov/electricity/annual/html/epa_11_06.html

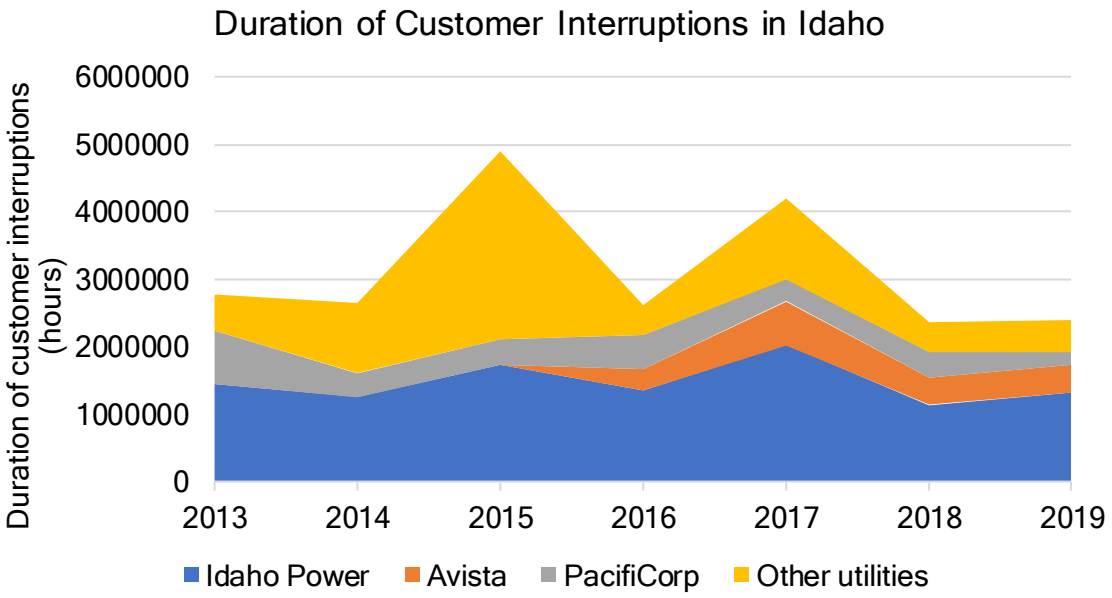

Figure 13. Total duration of Customer Interruptions in Idaho by Utility.[37] Values for each Utility are stacked, beginning with Idaho Power and ending with other utilities.

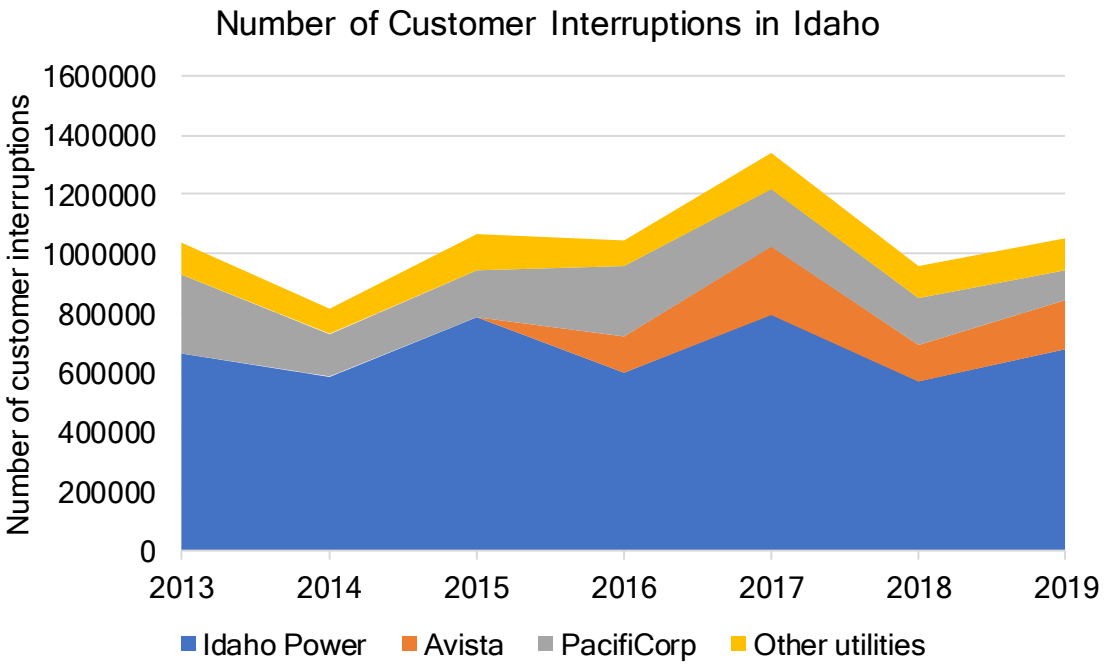

Figure 14. Total number of Customer Interruptions in Idaho by Utility.[38] Values for each Utility are stacked, beginning with Idaho Power and ending with other utilities.

[37] Based on the data obtained from the U.S. Energy Information Administration: "Annual Electric Power Industry Report, Form EIA-861 detailed data files". https://www.eia.gov/electricity/data/eia861/

[38] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

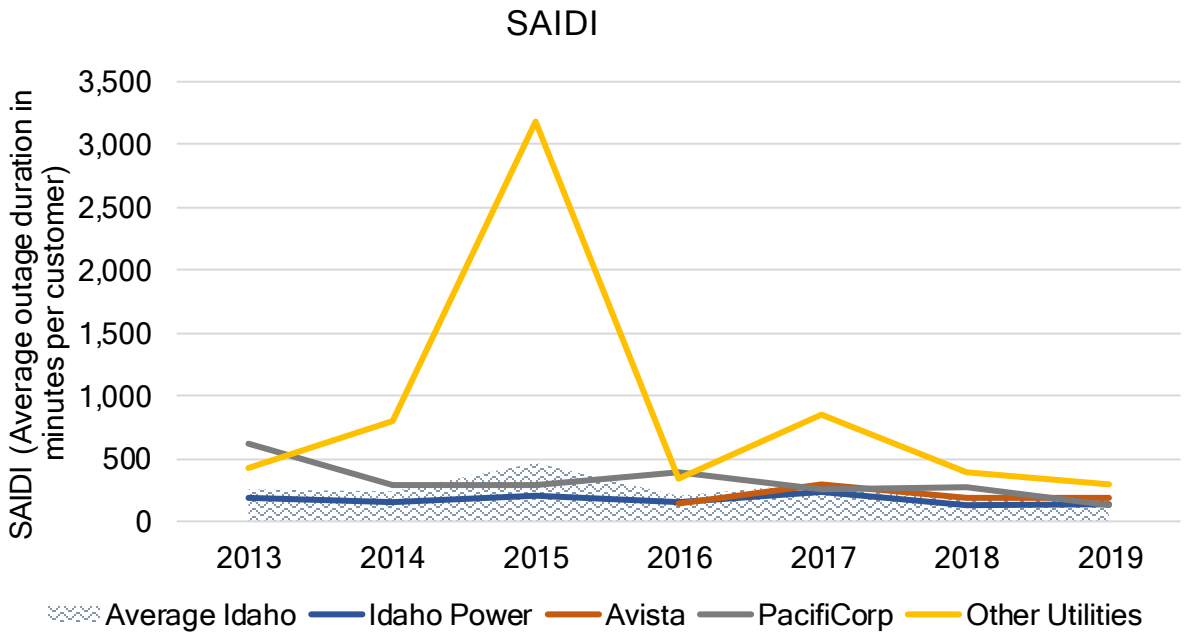

Figure 15. System Average Interruption Duration Index (SAIDI) in Minutes per Customer.[39] This figure depicts the average length, in minutes, of power outages an Idahoan experienced from 2013 to 2019 by utility.

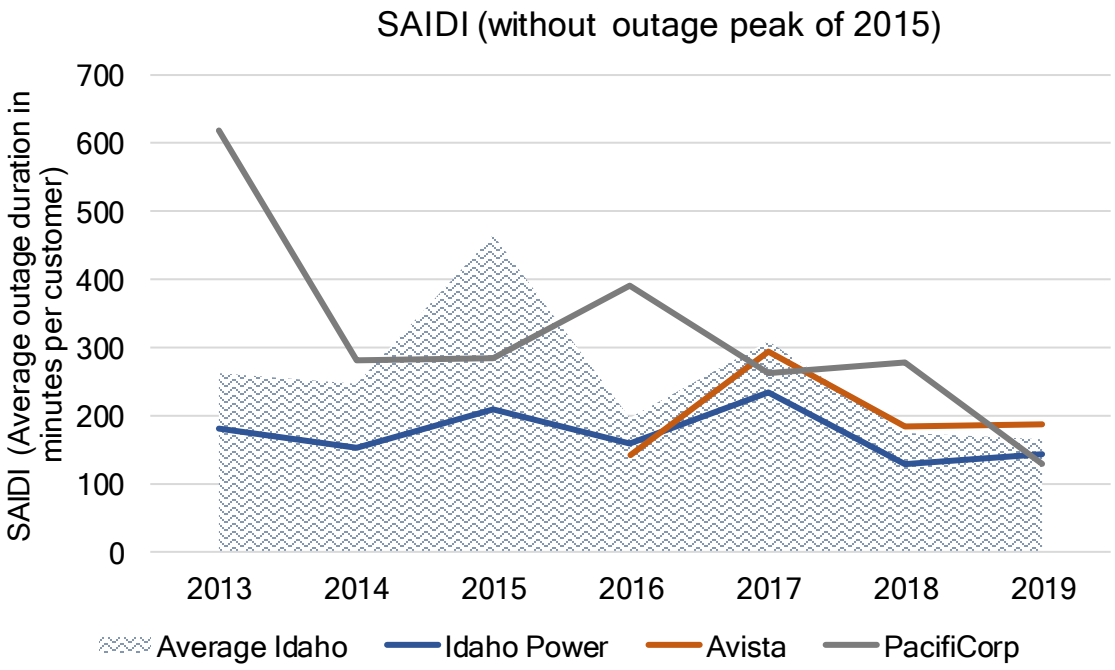

Figure 16. System Average Interruption Duration Index (SAIDI) Excluding Cooperative or Municipal Utilities to Eliminate the Peak in 2015. Data for Avista was not available before 2016.[38]

[39] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

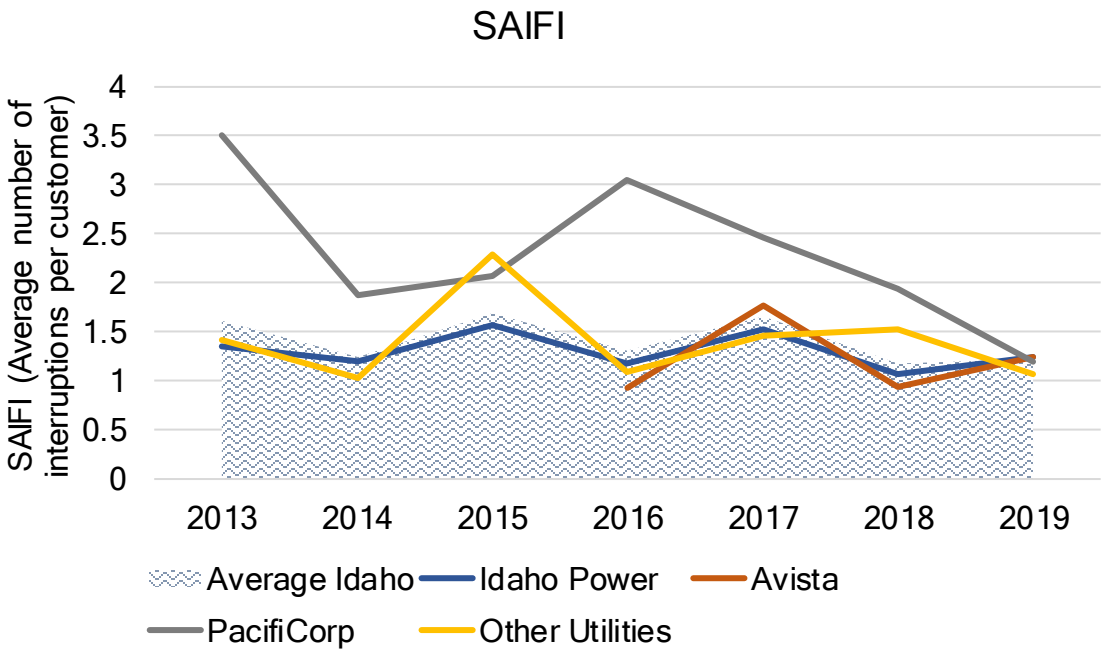

Figure 17. System Average Interruption Frequency Index (SAIFI).[40] This figure depicts the average number of power outages an Idahoan experienced from 2013 to 2019 by utility.

Causes Of Energy Outages

The Eaton Blackout Tracker annual report states that between 2008 and 2017, most outages in Idaho had been caused by weather or falling trees (**Figure 18**).[41] Those outages parallel the expected risks to the grid which were discussed earlier in The Plan, including weather and natural disaster impacts, infrastructure failure, and human errors.

Besides the average outage information, utilities must report emergency and unusual outages to the DOE. The criteria for emergency and unusual outages involves outages caused by a physical attack (a deliberate attack on the energy system), load shedding, islanding, natural disasters, cyberattacks, and others. Those events are collected in the Electric Disturbance Events (OE-417) Annual Summaries[42] which provide continuous data across states on disruption causes. These summaries are the main

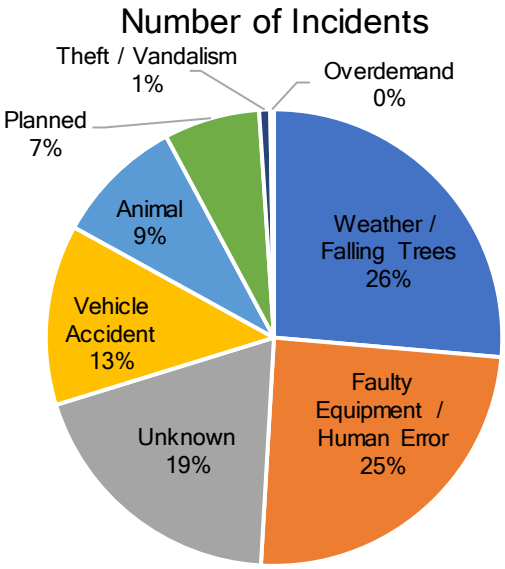

Figure 18. Electric Outages in Idaho and their Causes (2008-2017; Eaton tracking).[40] This figure illustrates the number and type of incidents that led to electricity outages between 2008 and 2017 in Idaho.

[40] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

[41] U.S. Department of Energy, "State of Idaho Energy Sector Risk Profile", https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf.

[42] U.S. Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response, "Electric Disturbance Events (OE-417) Annual Summaries", https://www.oe.netl.doe.gov/OE417_annual_summary.aspx.

source of information for major electric outages or unusual occurrences, which are reported by utilities and balancing authorities to DOE as an Electric Emergency Incident and Disturbance. Figures **Figure 19** through **Figure 21** summarize the number and causes of emergency events in Idaho.[43]

The major cause of emergency outages in 2010-2020 in Idaho were physical attacks, which includes vandalism and theft (**Figure 20 and Figure 21**). Although weather damages and cyberattack threats are an important part of the resiliency discussion, physical threats and attacks are still present and can lead to long outages.

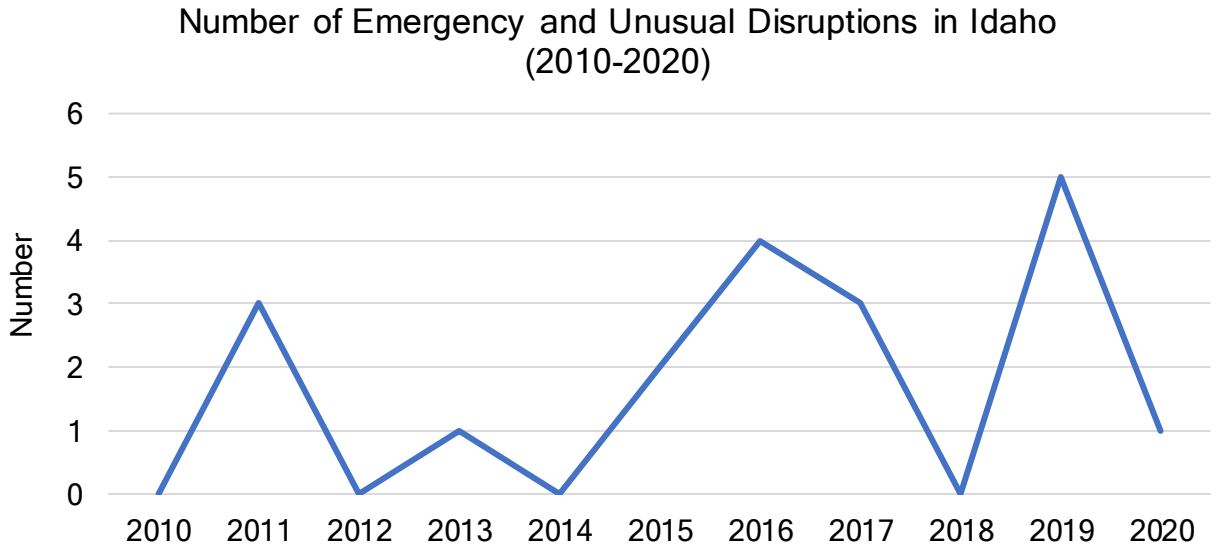

Figure 19. Number of Emergency and Unusual Disruptions leading to outages in Idaho. This figure illustrates cumulative power outages by year over the last decade.

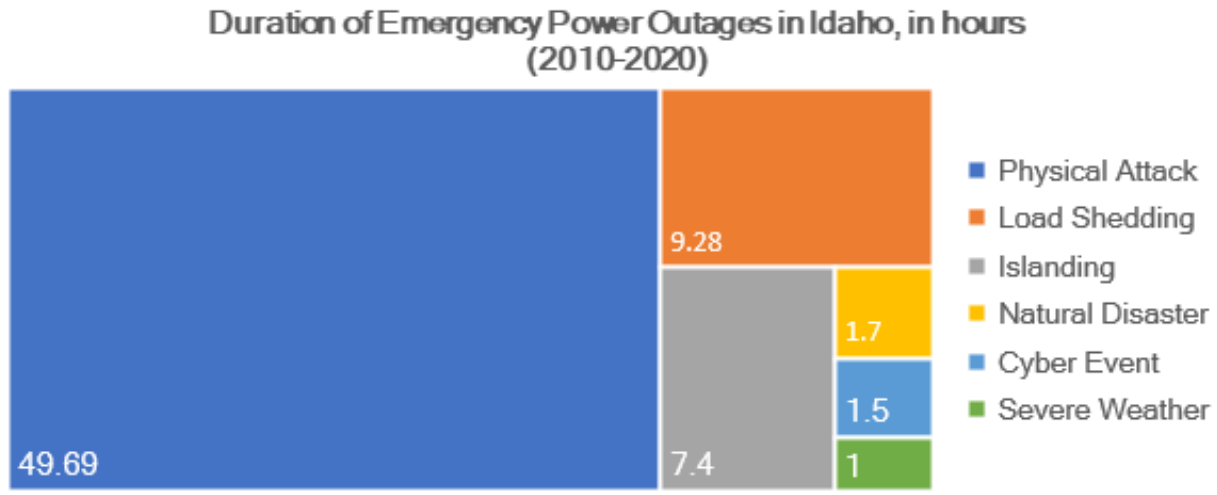

Figure 20. Total Duration of Emergency Power Outages in Idaho (in hours). This figure illustrates the total hours of emergency power outages and their causes in Idaho over the last decade.

[43] Figures 19-23 are based on data from: U.S. Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response, "Electric Disturbance Events (OE-417) Annual Summaries"

States across the Northwest region have seen outages with the same causes as Idaho, but the number of outages varied across states (**Figure 22**). Similarly, the number of outages across counties in Idaho have varied (**Figure 23**). In particular, Southeast Idaho is highlighted as having longer durations of major and unusual power outages, which is similar to the average power outage information across utilities (in which that region had a higher duration and number of outages per customer than other regions). More spatially informed information (via Geographic Information Systems data) could help further understanding of the regionality of power outages.

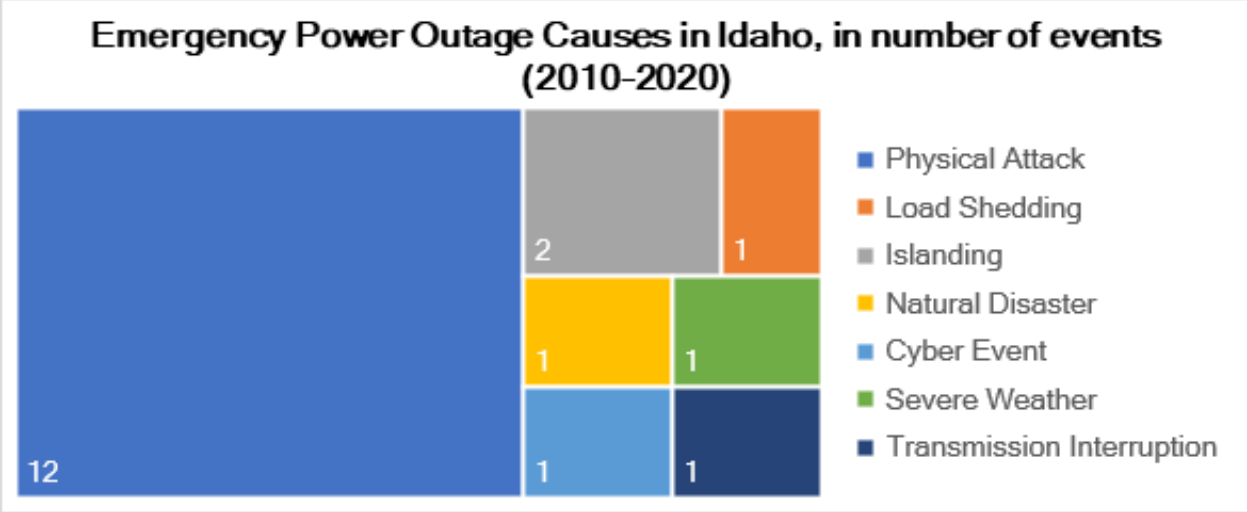

Figure 21. Total Number of Emergency Power Outages in Idaho. This figure illustrates the total number of emergency power outages and their causes in Idaho over the last decade.

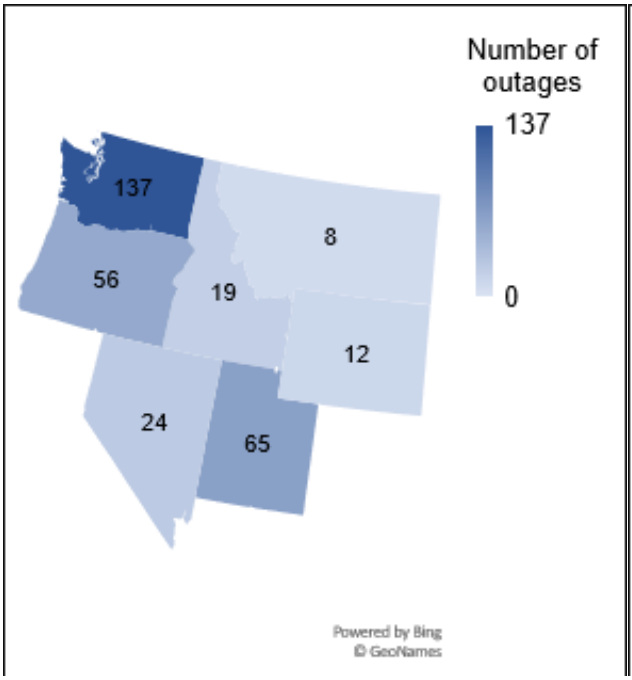

Figure 22. Map of Emergency Power Outage Occurrences in Idaho and Neighboring States. This figure illustrates the total number of emergency power outages in Washington, Oregon, Nevada, Idaho, Utah, Wyoming, and Montana over the last decade.

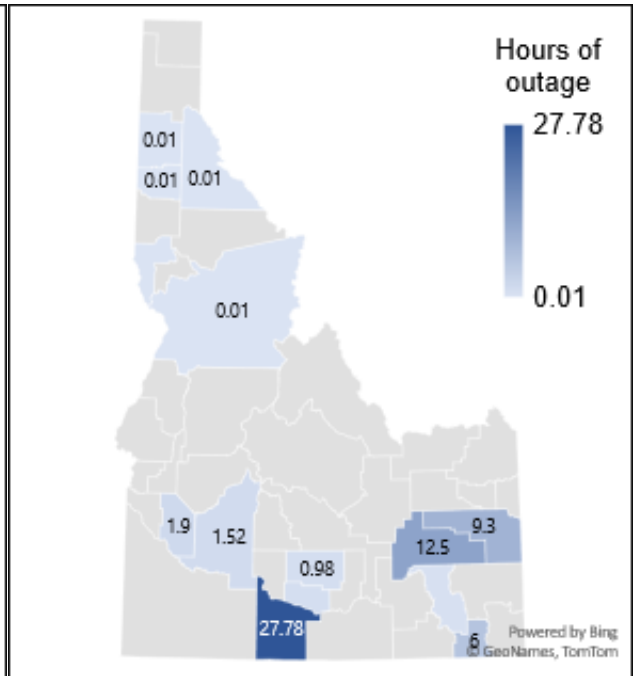

Figure 23. Duration of Emergency Power Outages in Idaho by County (in hours). No data was recorded from other counties in the Archive of power disturbances and emergencies.

Disruption Scenarios

Energy providers and energy security planners should review historic energy supply disruptions and analyze emerging risks in an effort to learn from and plan for future energy disruptions. The following information provides examples of disruption scenarios in Idaho and **Figure 24** depicts electric utility emergency information flows.

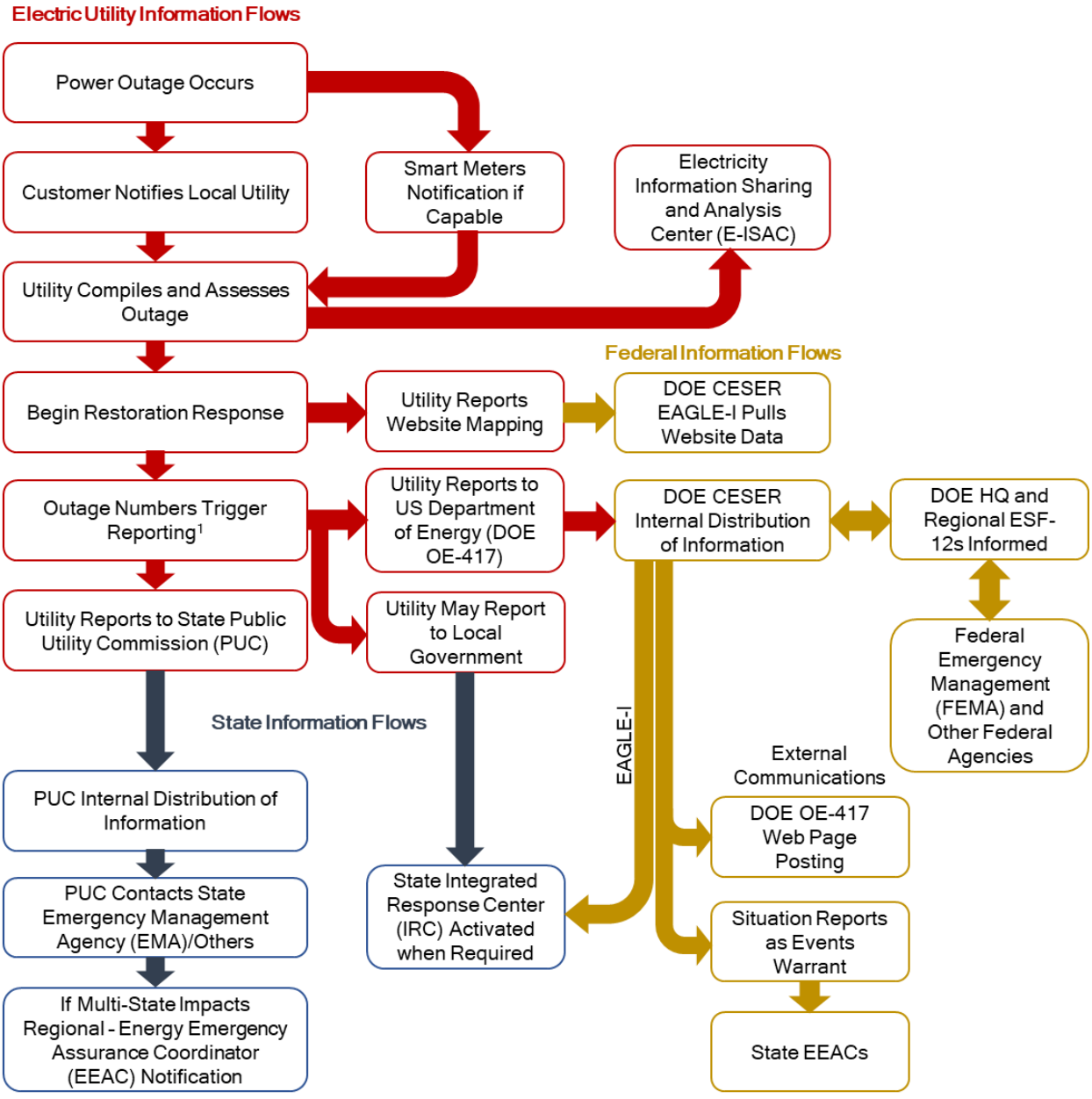

Figure 24. Power Outage Notification. This figure depicts how electric utility information on power outages generally flows through key energy emergency response stakeholders. *Adapted from:* Initial Power Outage Notifications Information Flow for Local Distribution Company, Local, State, and Federal Governments. National Association of State Energy Officials. Triggers and federal reporting may differ between states.

Wildfire-Related Outages:

Wildfires ignite more easily, burn more intensely, and spread faster when wildland fuels are desiccated by extended dry spells. Energy providers today face increased risk of an equipment failure starting a catastrophic wildfire, especially in the western United States where drought and wildfire are increasing in frequency.

Wildfires that are started naturally (by lightning or strong winds knocking down or blowing dry vegetation into power lines) or unnaturally (by humans) can burn through wooden transmission poles and create smoke that ionizes around an overhead conductor and causes faults. Fires can have a disproportionate impact on restoration efforts in cases where overhead lines must stay de-energized to provide safety for fire-fighting crews. Re-build efforts after a wildfire can be extensive and contribute to prolonged outage durations. Wildfires generally occur in less densely populated areas where sufficient fuel is present (i.e., range lands or forests). The Idaho Department of Lands provides an Idaho Fire Map which allows the public to track fire activity and restrictions.[44]

Example: Idaho Power. July 2021.

A forest fire in the Salmon and Snake River drainages (Snake River Fire) threatened a 230 kV transmission line interconnecting Idaho Power and neighboring utility Avista. At the request of the fire incident commander, the line was removed from service to allow for safe firefighting measures to be performed in close proximity to the line. The loss of this line reduces Idaho Power's ability to import energy from the northwest at a time of high customer demand. Alternative load service actions were used until the line was returned to service on July 15, 2021, to prevent loss of service to customers. Lessons learned:

- Close coordination with neighboring utilities is critical to maintain load service during fire season.
- Close coordination with fire incident command is critical for safe and effective firefighting measures.
- Application of fire- preventative measures is vital - no structures on Avista's line were lost due to a recent application of a fire-resistant paint. Both Avista and Idaho Power are currently utilizing a mesh wrap product on wood pole structures to help prevent damage from wildfires.

Flooding-Related Outages:

Flooding is one of the most common natural hazards in the United States, causing more damage than any other severe weather-related event. In the Northwest, flooding can occur from swollen rivers, heavy rains, tidal surges, spring snowmelt, levee or dam failure, local drainage issues and water distribution main breaks. Impacts to utilities can include damage to assets and dangerous conditions for personnel resulting in prolonged power outages. As storms become more frequent and intense and as sea levels rise, flooding will be an ongoing challenge for western utilities.

[44] Idaho Department of Lands. "View Current Wildfire Information on the Idaho Fire Map". https://www.idl.idaho.gov/fire-management/idaho-fire-map/

Example: Intermountain Gas - Boise District. Spring 2017.

Flood waters began rising near the end of April at Riviera Estates, which required a shut-in (or closure) of the system serving the area in mid-May, affecting approximately 16 customers. Service was restored as the flood waters receded. Most customers had their gas service restored by July 17th. Intermountain Gas Company (IGC) Boise District carried out the response.

- Frequent communication with affected customers and inclusion of IGC in the Emergency Operations Center (now known as the Idaho Response Center) communications and planning meetings were important factors in the success of the response.

Wind-Related Outages:

Flying debris or downed trees can make severe winds a threat to lives, property, and utilities. Windstorms, often accompanying severe thunderstorms, can knock down or blow dry vegetation into power lines, causing faults or outages. If wind gusts are strong enough overhead lines can be completely blown over, leaving dangerous live wires exposed to the public and severe equipment damage. In addition, accompanying lightning could cause faults or outages via strikes on overhead equipment. These storms most often occur in the summer but can also happen in the spring and autumn and are relatively rare in the winter. Wide-area wind events are less common than localized severe weather, but they generally have a larger impact on system performance and operational response because of their larger geographic extent.

Example: Northern Lights, Inc. January 2021.

In the early morning hours of January 13, 2021, high winds began to impact distribution and transmission circuits throughout Northern Lights, Inc (NLI) service area. These high winds continued throughout the day, with some portions of our service area being impacted by 60+ mph downslope winds that caused significant and widespread damage to our infrastructure. At the peak of the event, NLI had more than 15,000 of our 21,000 service locations out of service. Restoration efforts were hampered by extensive wind related tree damage and road hazards. Additionally, some locations experienced prolonged outages (up to 3 days) as crews completed time intensive repairs.

- During a severe storm event of this nature, when damage exceeds the available field resources, restoration is prioritized by transmission, then the largest distribution outages in terms of service locations affected, and then smaller distribution outages.

Extreme Cold-Related Outages:

Cold weather brings with it the potential for freezing temperatures, heavy snowfall and ice incidents that can have multiple impacts on a utility. Cold weather is typically most damaging to the overhead system when the snow is heavy and wet. Snow and ice can build up on overhead lines and cause faults or outages when it unloads, or on trees and either cause them to fall or branches to break and interfere with overhead lines. This happens most frequently in areas with tall evergreen trees that are well above the height of overhead lines. Cold weather events occur most often in the winter but can occur in the late autumn or early spring and are most likely to occur in areas with high elevation. Severe cold weather also leads to poor road conditions and/or low visibility, which can hinder or delay utility operational response. Additionally, some overhead facilities may not be easily accessed during seasons with heavy snow. For those facilities, special equipment such as a snow cat or snow mobiles may be required for access, which can lead to longer outage durations.

Example: Avista.

Avista's Idaho service area is subject to severe winter weather, including snow, wind, ice, and freezing rain, which have led to more than a dozen severe weather-related events that have resulted in loss of electric power to customers.

- Avista regularly monitors weather conditions and when severe or high impact weather events are forecasted, Avista takes proactive measures to ensure that crews are organized to respond to these events.
- Avista is a signatory to the Idaho Mutual Assistance Agreement, as well as the Western Region Mutual Assistance Agreement, to ensure they have mutual assistance resources if needed to support the restoration of customers.
- Avista has adopted the Incident Command System as the framework for coordinating response to any unplanned, emergency outage events. This enables Avista to scale up response teams, both in the field and in the office to support all facets of a recovery and restoration. Avista also utilizes this process to identify opportunities for continuous improvement in preparedness and response capabilities to electric outages.

Human Error-Related Outages:

There has been a growing concern with human error. Trends in the utility industry have increased the chances and costs of errors by power system operators. In the past, the consequences of human errors were usually confined to the immediate vicinity of the error. With increased technology, the impact has the potential to be felt across a much larger scale. The utility industry workforce must be taught how to avoid risks and proven preventative and corrective measures must be applied.

Example: Intermountain Gas - Pocatello District. May 2012.

Williams Northwest Pipeline employees were working at the American Falls Tap at roughly 4:30 pm on May 30th. The valve, which was supplying gas to the IGC for the town of American Falls, was left in the off position, causing an outage to 1,245 customers within the town of American Falls. By the end of the day on June 1st, all but 106 customers had their power restored. Williams Northwest Pipeline did not monitor pressure long enough to see a pressure drop on IGC's side of that valve. IGC's low pressure auto-dialer did not give a warning to the low-pressure situation because of a lack of maintenance. Lessons learned included:

a. The IGC Pocatello District committed, from this point forward, to maintaining the pre-emergency warning systems. This includes maintenance to the auto-dialers and making efforts to replace the auto-dialers with SCADA whenever possible.
b. The IGC Pocatello District also committed to working with Williams Northwest Pipeline to ensure that IGC is aware of meter stations that they will be shutting in, so that IGC can help in monitoring downstream systems to avoid a similar situation in the future.

Cyberattacks

Cyberattacks pose a significant risk to energy infrastructure and security. As some utilities move toward a decarbonized energy mix, energy infrastructure faces a growing number of operational shifts that increase both opportunities and challenges for grid security. Technological developments, such as distributed generation, demand response, and advanced metering,

coupled with regulatory efforts, such as FERC Orders 841 and 2222,[45] are dismantling barriers which will lead to broad participation by newly aggregated distributed energy resources and microgrids in increasingly complex energy markets. Utilities plan to deploy an assortment of behind-the-meter (BTM) equipment to achieve real-time awareness and control as the system evolves. The resulting operating paradigm represents a fundamental shift from current protocols and requires novel digital solutions to maintain broader grid reliability and resilience. This enhanced functionality comes at the cost of an escalating cybersecurity risk, owing to the sharp increase in digitization and corresponding attack surface area.

Idaho has not experienced known effects of cyberattacks on its systems. Descriptions of cyberattacks that have happened in other parts of the globe are presented below.

Colonial Pipeline Ransomware Cyberattack. May 7th, 2021:

On May 7th, 2021, the Colonial Pipeline became a victim of a ransomware cyberattack.[46] The pipeline connects refineries in Houston, Texas with East Coast consumers as far as Linden, New Jersey, and transports 2.5 million barrels per day which is almost half of the East Coast's petroleum products.

The attack has been linked to a group, called the DarkSide, which held the pipeline's data hostage and threatened to release those data unless they received a specified ransom amount. Staff received a notice of the attack stating the computers and servers have been encrypted. The pipeline operating company took the cloud system offline in response to the attack to prevent the release of the data held hostage which resulted in pausing the pipeline's transportation of petroleum products.[47] Colonial Pipeline confirmed paying $4.4 million to the group[48] and restored full service of the pipeline after six days of limited to no service.[49]

The attack is still under investigation. However, analysts report that because of the COVID-19 pandemic, more employees of the pipeline company were accessing the control systems remotely from home, which could have made it easier for DarkSide to access the computer system. This example provides an idea of how digitization might escalate system risk for cyberattacks and how areas that rely on a single pipeline can be at risk of similar system disruptions.

Ukraine Power Utility Hack. December 23, 2015:

In Western Ukraine on December 23, 2015, a cyberattack resulted in 250,000 homes and businesses without power for one to six hours. A worker at the power control center saw that the cursor on the screen was moving without his control, and saw the attacker put 30 substations and

[45] FERC. "Order 841". https://www.ferc.gov/media/order-no-841; FERC. "Order 2222". https://www.ferc.gov/news-events/news/ferc-opens-wholesale-markets-distributed-resources-landmark-action-breaks-down

[46] BBC. "US fuel pipeline hackers 'didn't mean to create problems'". https://www.bbc.com/news/business-57050690

[47] Colonial Pipeline. "Media Statement Update: Colonial Pipeline System Distribution". https://www.colpipe.com/news/press-releases/media-statement-colonial-pipeline-system-disruption

[48] The Wall Street Journal. "Colonial Pipeline CEO Tells Why He Paid Hackers a $4.4 Million Ransom". https://www.wsj.com/articles/colonial-pipeline-ceo-tells-why-he-paid-hackers-a-4-4-million-ransom-11621435636

[49] Bloomberg. "Colonial Pipeline Paid Hackers Nearly $5 Million in Ransom". https://www.bloomberg.com/news/articles/2021-05-13/colonial-pipeline-paid-hackers-nearly-5-million-in-ransom

several distribution centers offline.[50] The operator could not regain control of the cursor or access the control panel.

The attack was carried out through a malware "KillDisk" that was designed to wipe data from hard drives.[51] It was the last stage of several components that were implemented in the attack, starting from distributing a malicious Excel file that prompted employees to enable macros. Besides disrupting the power supply, the attackers targeted a call center that prevented the affected customers from being able to report the location of the outage. Power was able to be restored within six hours by hand because of the manual controls that still exist in the grid network since the Soviet times.[52]

Sustaining Energy Security Capabilities in Idaho

Conservation, Energy Efficiency, and Demand Response

"Conservation" refers to a consumer's personal actions that reduce their use of energy-consuming devices. For example, turning the lights off when leaving a room.[53] "Energy efficiency" refers to processes of utilizing technology that consumes a lower amount of electricity while providing sufficient service. For example, switching from incandescent lights bulbs to LED light bulbs.[52]

"Demand response" refers to customers temporarily altering their energy-consuming behavior during times of higher demand for electricity, usually in response to signals from the utility or grid operator. For example, authorizing a utility to remotely control heating and ventilation systems during times of high electricity demand.[54] Collectively, these resources are often referred to as "demand-side management" (DSM), by utilities and other companies in the power industry.

DSM practices do not generate any new energy, but they do constitute an economically attractive resource that can be utilized to meet the energy needs of customers. To affect system reliability, DSM practices must reduce energy consumption, in addition to also helping reduce congestion and overloads that occur when electrical grids are asked to deliver more power than system constraints allow. While it is obvious that DSM practices support the reliability and resilience of an energy system, these benefits are typically not included in system planning, decision making, and cost-effectiveness analysis. Energy experts, such as the Idaho National Laboratory, are actively working to establish qualitative and quantitative resilience metrics that can measure the reliability benefits of DSM practices.

Idaho utilities have utilized cost-effective, sustainable DSM programs for over four decades in an effort to conserve both company and customer resources and maintain system reliability. OEMR participates in several activities that increase cost-effective DSM practices, both in Idaho and regionally. These activities include participating on the Northwest Energy Efficiency Alliance (NEEA) Board of Directors, Idaho Power's Energy Efficiency Advisory Group (EEAG),

[50] WIRED, "Inside the Cunning, Unprecedented Hack of Ukraine's Power Grid", https://www.wired.com/2016/03/inside-cunning-unprecedented-hack-ukraines-power-grid/.

[51] NJCCIC, "KillDisk", https://www.cyber.nj.gov/threat-center/threat-profiles/trojan-variants/killdisk.

[52] E&E News, "Utilities look back to the future for hands on cyberdefense", https://www.eenews.net/special_reports/the_hack/stories/1060040590.

[53] U.S. Energy Information Administration. "Use of Energy Explained." https://www.eia.gov/energyexplained/index.cfm?page=about_energy_efficiency

[54] U.S. Energy Information Administration. "Demand response saves electricity during times of high demand." https://www.eia.gov/todayinenergy/detail.php?id=24872

Intermountain Gas Company's energy efficiency advisory group, and the Idaho Energy Code Collaborative.

In addition to these activities, OEMR maintains the Government Leading by Example activity, which provides building energy audits to local governments in rural areas and state agencies interested in saving energy in existing public buildings. Under this activity, OEMR also provides cost-share funding for energy retrofits.

Idaho's energy consumption per capita has decreased by almost 25% (22.05%) from 1990 levels, as of 2019.[55] OEMR continues to pursue advances in DSM practices by working with our utilities to promote cost-effective energy efficiency opportunities across the state, as well as continuing to finance energy efficiency improvements through the Loan Program.

Data Procurement and Management

Data availability and accessibility is pivotal in improving energy security planning. The following information provides suggestions for how to improve voluntary outage data procurement and management in the state.

Spatial data, or data presented in a geographic manner, can better inform users about the frequency or intensity of energy supply shortages and the regionality of energy issues. Collecting data in spatial software like Geographic Information Systems (GIS) platforms can help stakeholders understand if energy outages prevail in certain areas or communities in Idaho and better estimate areas that might require more support for consistent energy access compared to others.

Several platforms can be used to collect such spatial data. GIS software is available for analysis as Q-GIS or ArcGIS (with a web-option). Furthermore, U.S. DOE operates a national-level interactive GIS database for energy infrastructure called EAGLE-I™.[56] It allows users to view and map the nation's energy infrastructure and obtain near real-time informational updates concerning the electric, petroleum and natural gas sectors within one visualization platform. Using such a platform for Idaho-level data collection may help improve Idaho energy resiliency planning and understanding of the regional energy supply opportunities and limitations.

Data on energy disruptions are reported to the emergency management entities but do not always make their way to the important decision-makers on energy infrastructure or resilience. Region-specific outage data can improve learning from the past outages and their local causes. The EAGLE-I tool provides the National Outage Map (NOM) that displays the number of customers experiencing outages in each county every 15 minutes.[57] In combination with national-level data, utilities could provide the key stakeholders, in particular the State's ESF #12 coordinators, with regular information on the outages, their location and cause.

[55] U.S. Energy Information Administration. "Total energy consumption per capita by end-use sector." https://www.eia.gov/state/seds/seds-data-complete.php?sid=US#StatisticsIndicators

[56] U.S. Department of Energy. "EAGLE-I". https://eagle-i.doe.gov/login.

[57] U.S. Department of Energy, "EAGLE-I: Environment for Analysis of Geo-Located Energy Information National Outage Map", https://www.csm.ornl.gov/newsite/documents/highlights/Science_Highlight_Eagle-I.pdf

Emergency Management Exercises

Idaho participates in emergency management exercises on a regular basis to promote emergency preparedness. Such exercises provide Idaho opportunities to strengthen crisis communications and relationships between key stakeholders and provide feedback for lessons learned during the exercises. Continued and enhanced voluntary participation in emergency management exercises will improve Idaho's ability to respond to energy emergencies efficiently and effectively. The following information provides an overview of two exemplary emergency management exercises which Idaho participates in regularly:

GridEx VI (Fall 2021) - NERC

- GridEx presents a distributed play grid exercise that simulates a cyber and physical attack on the North American electricity grid and other critical infrastructure. Led by NERC's E-ISAC, GridEx gives participants a forum to demonstrate how they would respond to and recover from coordinated cyber- and physical-security threats and incidents.[58]
- In 2019 for GridEx V and in 2021 for GridEx VI, Idaho convened state and local stakeholders to participate in GridEx V at the State Emergency Operation Center (now referred to as the Idaho Response Center). State leaders focused the exercise to center strictly on in-state impacts and response.
- Idaho will review lessons learned from GridEx VI and plan to participate in additional energy emergency response exercises in the future.

Clear Path IV (Spring 2016) - DOE's Office of Cybersecurity, Energy Security, and Emergency Response (CESER), DHS, FEMA

- Clear Path IV addressed the challenges the energy sector may face during a catastrophic Cascadia Subduction Zone earthquake and tsunami.
- The focus was placed on: (1) collaboration between government and industry during efforts to organize response; (2) assessing impacts to energy systems; (3) communicating information to develop situational awareness and a common operating picture; and (4) facilitating the delivery of capabilities across internal and mutual assistance networks.[59]
- Idaho convened state and local stakeholders to participate in Clear Path IV, under the lead of the Idaho Office of Emergency Management (IOEM). IOEM focused the exercise to center strictly on in-state impacts and response.

Utility Engagement

Idaho's utility service providers play a crucial role in Idaho's energy security planning. Their voluntary engagement in emergency preparedness activities is key to optimizing the state's ability to withstand emergency events without experiencing outages. The following information provides suggestions for supporting utility engagement in emergency preparedness:

- Continue to encourage Idaho utilities to take all prudent steps to insulate infrastructure in Idaho for national disaster, wildfire, winter storms, and floods.

[58] NERC. "GridEx V Lesson Learned Report, March 2020". https://www.nerc.com/pa/CI/ESISAC/GridEx/GridEx%20V%20Public%20Report.pdf

[59] U.S Department of Energy. "Clear Path IV Executive Summary Report". https://www.energy.gov/sites/prod/files/2016/08/f33/ClearPathIV_Exercise%20Summary%20Report_Public%20Release.pdf

- Continue to encourage Idaho utilities to work with the DOE, NERC, Idaho National Laboratory, and other relevant entities to ensure Idaho's energy systems are as safe as can be and resilient against cyberattack.
- Continue to encourage Idaho utilities to include resiliency components and risk profiles specific to their service territory in their Integrated Resource Planning processes.
- Continue to encourage Idaho utilities to pursue cost-effective energy efficiency investments that lower energy demand in the state.

Community Resilience

Idaho is proud to be known for its beautiful mountainous landscapes and vast swaths of protected wilderness and outdoor recreation areas. Supporting a resilient energy system and the conservation of natural resources across the state makes powering rural and remote communities a unique challenge for utility service providers. Independent electricity resources, commonly known as microgrids, that can provide affordable, abundant, and accessible power provide great advantages in maintaining reliability and resiliency in non-urban areas. There are opportunities to bolster community resilience and independence by pursuing cost-effective microgrid technology that will help to ensure critical elements of the Idaho energy system, such as petroleum transportation, are resilient against large-scale power outages.

Building in redundancies is an important way of ensuring energy resilience. Redundancies are elements of physical and software infrastructure that provide back-ups in the energy system. Such infrastructure can include additional energy production facilities, storage, and transmission. Because of the amount of electricity that is imported to Idaho, having reliable transmission and storage are important for energy security and supply continuity.

Conclusion

The 2022 Idaho Energy Security Plan provides critical information to support and connect emergency management stakeholders and outlines how information will be communicated in the event of an energy emergency.

The Plan identifies historic energy supply risks in Idaho and outlines emerging energy risks in an effort to learn from and plan for future energy disruptions. In energy security planning, strong engagement with local stakeholders is critical to preventing energy disruptions and efficiently responding to crises. The Plan identifies key points of contact and outlines how the public, energy stakeholders, and emergency responders can successfully collaborate to respond to energy emergencies. Idaho must continue to enhance energy security planning in a manner that adapts and evolves alongside the changing energy landscape in Idaho, ensuring that all Idahoans have access to reliable and affordable energy when and where they want it. In addition to energy assurance, laws and regulations are critical to shaping energy security. **Appendix J** provides a summary of laws and regulations that apply to energy security and energy emergency planning. Finally, **Appendix K** outlines guidance for revising and updating The Plan, including suggested timeframes and review opportunities.

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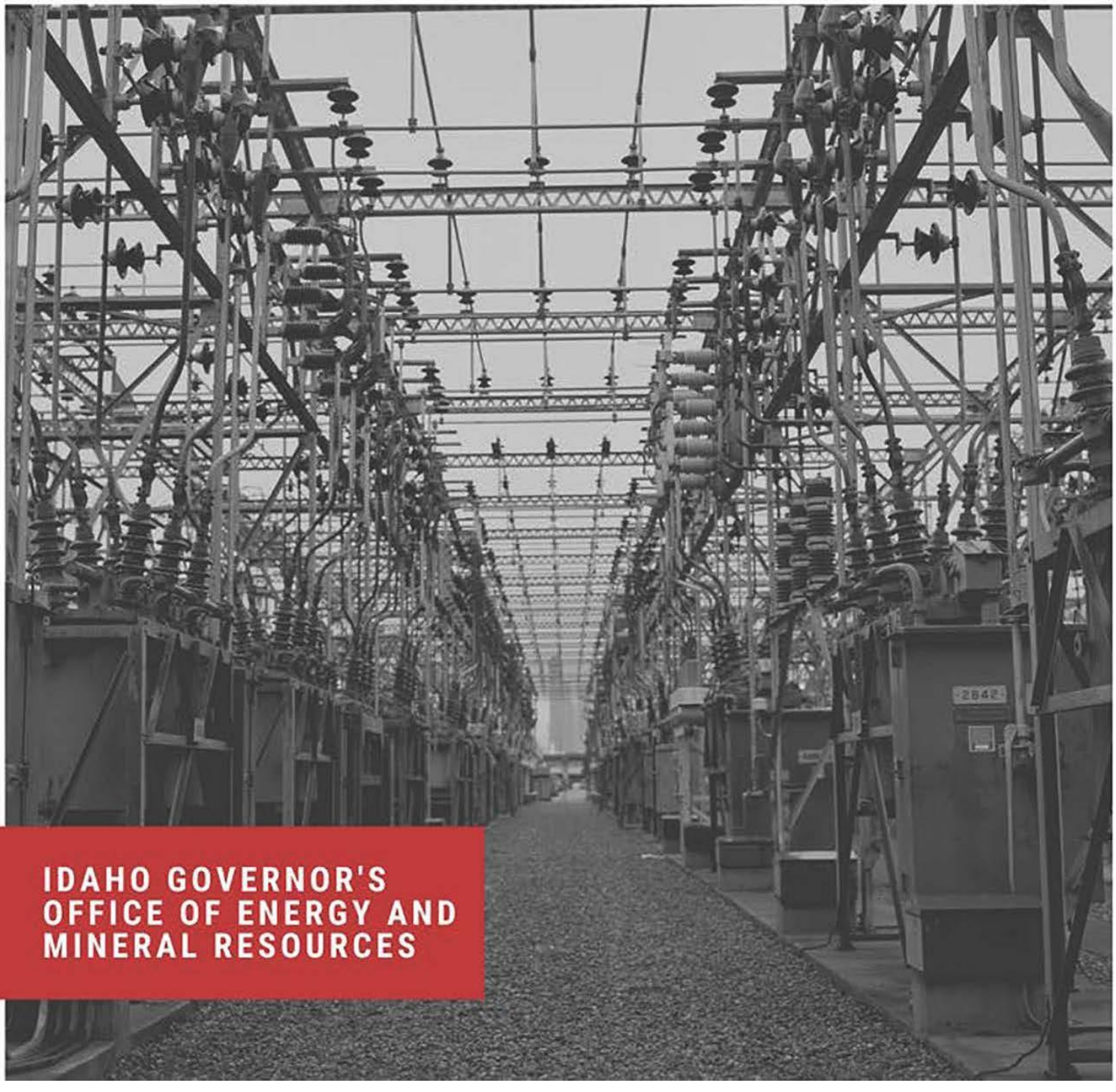
IDAHO ENERGY SECURITY PLAN - APPENDICES

ENSURING ENERGY SUPPLY AND ACCESS ACROSS THE STATE

2022



IDAHO GOVERNOR'S OFFICE OF ENERGY AND MINERAL RESOURCES

Appendix - Table of Contents

Appendix A. Idaho Energy Landscape

The most recent version of the Idaho Energy Landscape can be found on the Idaho Office of Energy and Mineral Resource's website (www.oemr.idaho.gov) and the 2021 version is available via this link: https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf

The goal of the Idaho Energy Landscape is to provide an accurate and up-to-date resource that enables stakeholders and the public to gain a deeper understanding of the current state of energy in Idaho. This is achieved through an in-depth review of:

- The role energy plays in Idaho's economy
- Current trends in Idaho energy consumption, production, and prices
- State, Regional, and Federal energy regulators and coordinators
- Idaho's energy sources
- Conservation, energy efficiency, and energy storage
- Idaho's energy outlook
- Energy research and education entities in Idaho

Appendix B. Idaho Risk Profile (2021 version)

The U.S. Department of Energy's (DOE) Office of Cybersecurity, Energy Security, and Emergency Response (CESER) published a series of State and Regional Energy Risk Profiles, developed in collaboration with Argonne National Lab (ANL), to support state energy security planning. The updated and streamlined profiles examine the causes, frequency, and history of energy disruptions for the 50 U.S. states and the District of Columbia. The regional profiles provide a multi-state view and were restructured to align with the 10 regions defined by the Federal Emergency Management Agency (FEMA).

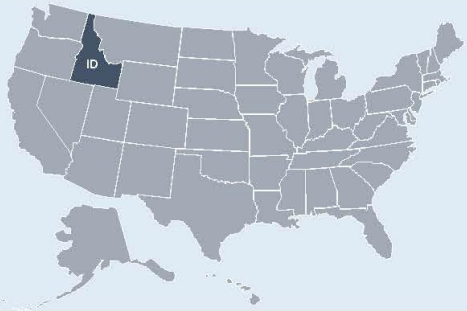
The profiles include state energy facts, an overview of hazards and economic property loss, and key energy infrastructure trends and impacts across the electric, petroleum, and natural gas sectors. They enable states to better prepare for any potential energy infrastructure risks or disruptions.

The State and Regional Energy Risk Profiles are a critical component of CESER's State Local, Tribal, and Territorial (SLTT) Program, advancing SLTT government officials' risk awareness, and informing policy and investment decisions as well as mitigation strategies. Governors, state energy office directors, public utility commissioners, and emergency managers have utilized past profile data in their state energy security plans, stakeholder presentations, and tabletop exercises.

State and Regional Energy Risk Profiles can be found on the DOE's website or via this link: https://www.energy.gov/ceser/state-and-regional-energy-risk-profiles

State of Idaho
ENERGY SECTOR RISK PROFILE

U.S. DEPARTMENT OF ENERGY
Cybersecurity, Energy Security, and Emergency Response



Idaho State Facts

POPULATION	HOUSING UNITS	BUSINESS ESTABLISHMENTS
1.75 M	0.74 M	0.05 M

ENERGY EMPLOYMENT: 13,298 jobs
PUBLIC UTILITY COMMISSION: Idaho Public Utilities Commission
STATE ENERGY OFFICE: Idaho Governor's Office of Energy and Mineral Resources
EMERGENCY MANAGEMENT AGENCY: Idaho Homeland Security and Emergency Management Agency
AVERAGE ELECTRICITY TARIFF: 8.17 cents/kWh
ENERGY EXPENDITURES: $3,672/capita
ENERGY CONSUMPTION PER CAPITA: 322 MMBtu
(22nd highest out of 50 states and Washington, D.C.)
GDP: $77.1 billion

Data from 2020 or most recent year available.
For more information, see the Data Sources document.

ANNUAL ENERGY CONSUMPTION

ELECTRIC POWER: 23,750 GWh
COAL: 100 MSTN
NATURAL GAS: 120 Bcf
MOTOR GASOLINE: 18,100 Mbbl
DISTILLATE FUEL: 13,000 Mbbl

ANNUAL ENERGY PRODUCTION

ELECTRIC POWER GENERATION: 138 plants, 18.4 TWh, *5.3 GW total capacity*
- **Coal:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Hydro:** 74 plants, 10.3 TWh, *2.7 GW total capacity*
- **Natural Gas:** 7 plants, 4.3 TWh, *1.2 GW total capacity*
- **Nuclear:** 0 plants
- **Petroleum:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Wind & Solar:** 41 plants, 3.1 TWh, *1.2 GW total capacity*
- **Other sources:** 14 plants, 0.7 TWh, *0.2 GW total capacity*

COAL: 0 MSTN
NATURAL GAS: 0 Bcf
CRUDE OIL: 0 Mbbl
ETHANOL: 1,500 Mbbl

Data from EIA (2018, 2019).

This State Energy Risk Profile examines the relative magnitude of the risks that the state of Idaho's energy infrastructure routinely encounters in comparison with the probable impacts. Natural and man-made hazards with the potential to cause disruption of the energy infrastructure are identified. Certain natural and adversarial threats, such as cybersecurity, electromagnetic pulse, geomagnetic disturbance, pandemics, or impacts caused by infrastructure interdependencies, are ill-suited to location-based probabilistic risk assessment as they may not adhere to geographic boundaries, have limited occurrence, or have limited historic data. Cybersecurity and other threats not included in these profiles are ever present and should be included in state energy security planning. A complete list of data sources and national level comparisons can be found in the Data Sources document.

Idaho Risks and Hazards Overview

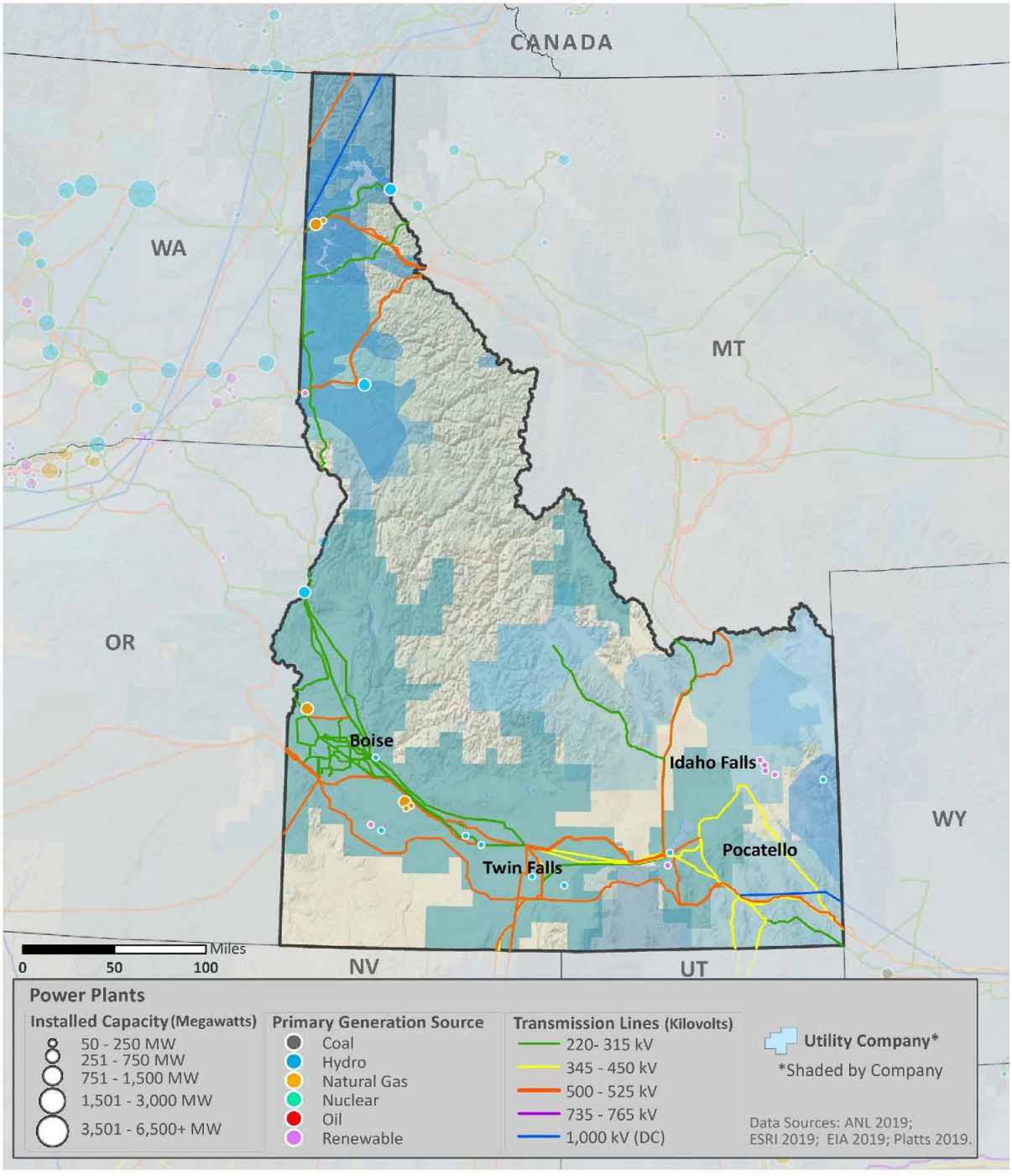
- The natural hazard that caused the greatest overall property loss between 2009 and 2019 was **Wildfires** at $51 million per year *(3rd leading cause nationwide at $2.1 billion per year).*
- Idaho had 41 Major Disaster Declarations, 0 Emergency Declarations, and 11 Fire Management Assistance Declarations for 15 events between 2013 and 2019.
- Idaho registered 2% fewer Heating Degree Days and 13% greater Cooling Degree Days than average in 2019.
- There is 1 Fusion Center located in Meridian.

Annualized Frequency of and Property Damage Due to Natural Hazards, 2009–2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized ($Million per year)
Drought	0	$0
Earthquake (≥ 3.5 M)	11	$0
Extreme Heat	<1	$0
Flood	18	$9
Hurricane	0	$0
Landslide	5	$1
Thunderstorm & Lightning	44	$4
Tornado	6	$0
Wildfire	17	$51
Winter Storm & Extreme Cold	47	$10

Data Sources: NOAA and USGS

ELECTRIC


CANADA
WA
MT
OR
WY
NV
UT
Boise
Idaho Falls
Pocatello
Twin Falls
Miles
0
50
100
Power Plants
Installed Capacity (Megawatts)
50 - 250 MW
251 - 750 MW
751 - 1,500 MW
1,501 - 3,000 MW
3,501 - 6,500+ MW
Primary Generation Source
Coal
Hydro
Natural Gas
Nuclear
Oil
Renewable
Transmission Lines (Kilovolts)
220- 315 kV
345 - 450 kV
500 - 525 kV
735 - 765 kV
1,000 kV (DC)
Utility Company*
*Shaded by Company
Data Sources: ANL 2019; ESRI 2019; EIA 2019; Platts 2019.

Electric Infrastructure

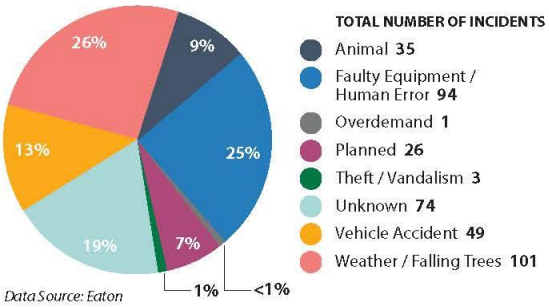
- Idaho has 24 electric utilities:
  - *1 Investor owned*
  - *13 Cooperative*
  - *10 Municipal*
  - *0 Other utilities*
- Plant retirements scheduled by 2025: 3 electric generating units totaling 5 MW of installed capacity.
- In 2018, the average Idaho electric customer experienced 1.2 service interruptions that lasted an average of less than 1 hour.
- In Idaho, between 2008 and 2017:
  - *The greatest number of electric outages occurred in **July** (leading month for outages nationwide)*
  - *The leading cause of electric outages was **Weather or Falling Trees** (leading cause nationwide)*
  - *Electric outages affected 117,219 customers on average*

Electric Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	84%	35%
Commercial	13%	27%
Industrial	3%	37%
Transportation	<1%	<1%

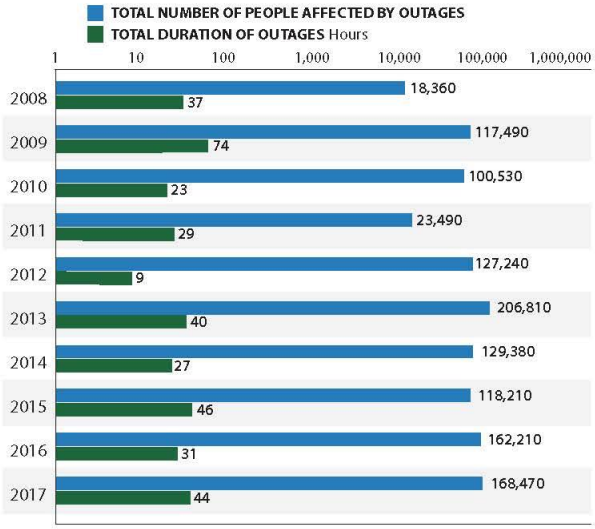
Data Source: EIA

Electric Utility-Reported Outages by Cause, 2008–2017



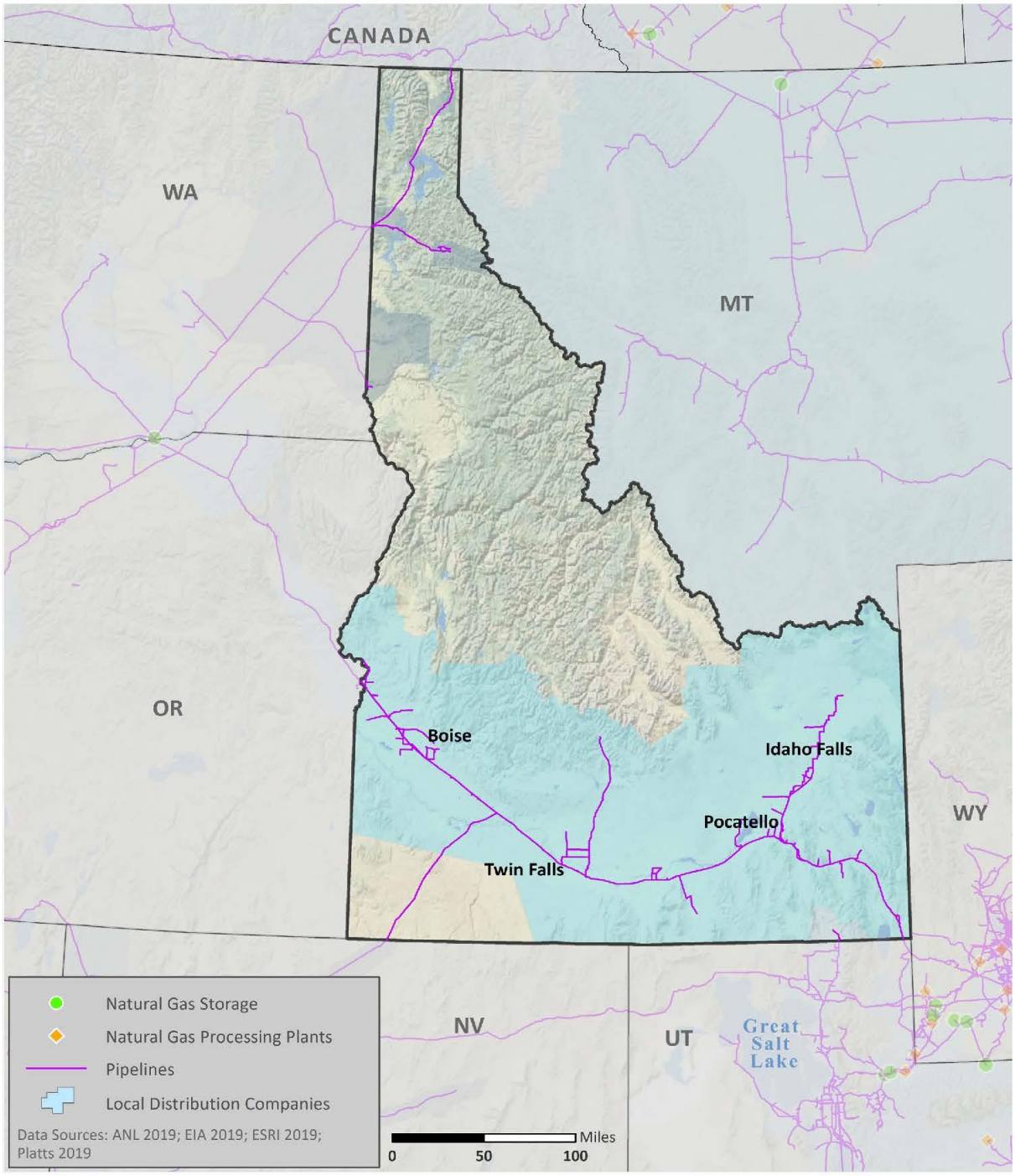
Data Source: Eaton

Electric Utility Outage Data, 2008–2017



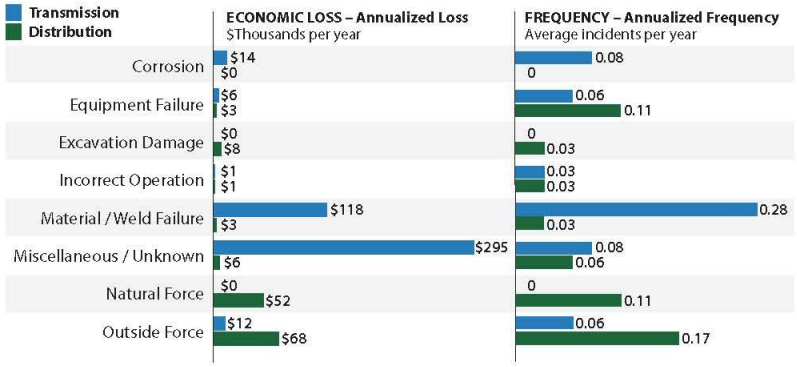
Note: This chart uses a logarithmic scale to display a very wide range of values.
Data Source: Eaton

NATURAL GAS


CANADA
WA
MT
OR
WY
NV
UT
Boise
Idaho Falls
Pocatello
Twin Falls
Great Salt Lake
Natural Gas Storage
Natural Gas Processing Plants
Pipelines
Local Distribution Companies
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2019
Miles
0
50
100

Natural Gas Transport

Top Events Affecting Natural Gas Transmission and Distribution, 1984–2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *1,480 miles of natural gas transmission pipelines*
  - *8,692 miles of natural gas distribution pipelines*
- 50% of Idaho's natural gas transmission system and 12% of the distribution system were constructed prior to 1970 or in an unknown year.
- Between 1984 and 2019, Idaho's natural gas supply was most impacted by:
  - ***Miscellaneous or Unknown** events when transported by transmission pipelines (5th leading cause nationwide at $16.77M per year)*
  - ***Outside Forces** when transported by distribution pipelines (leading cause nationwide at $76.59M per year)*

Natural Gas Processing and Liquefied Natural Gas

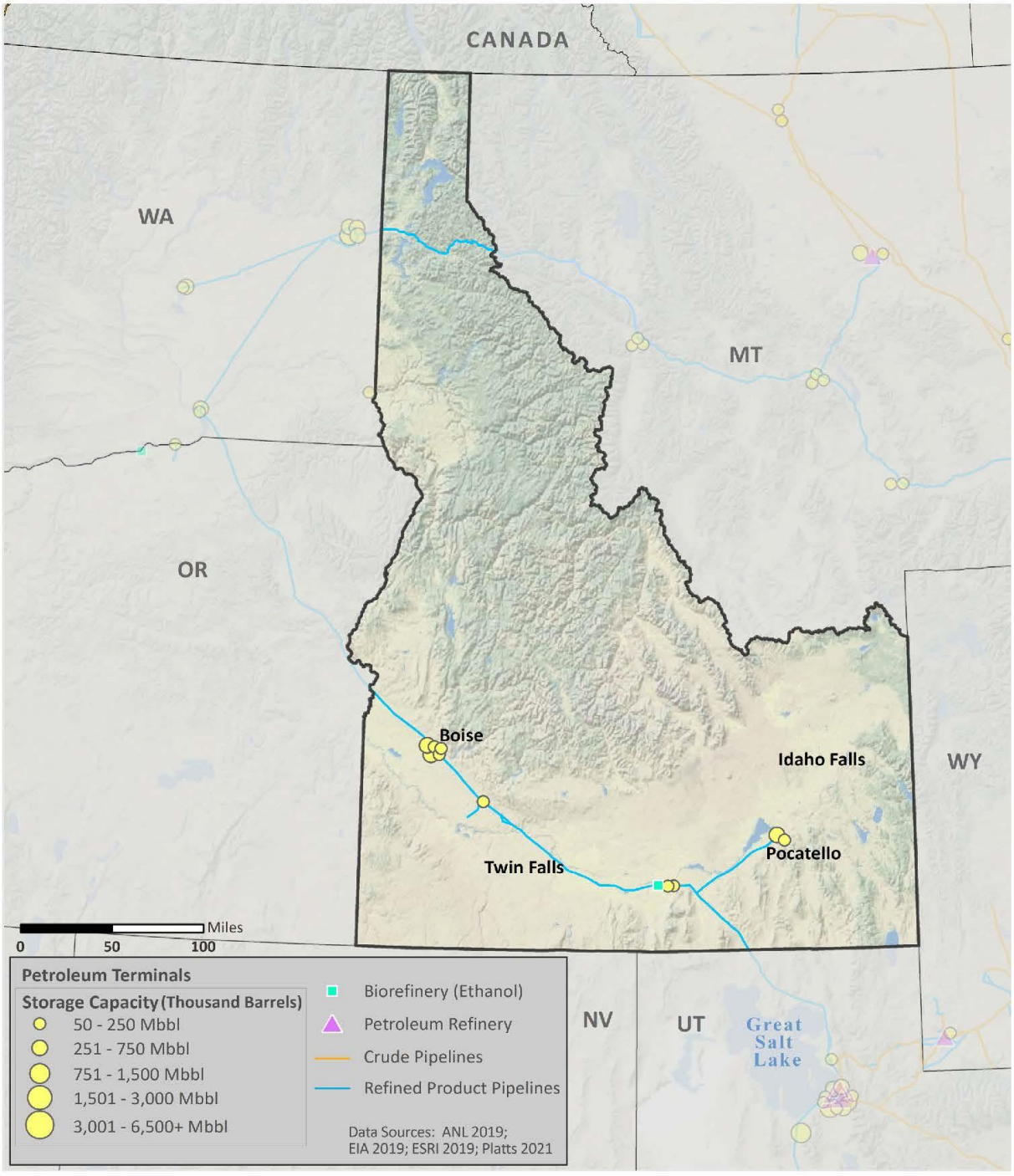
Natural Gas Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	90%	26%
Commercial	9%	18%
Industrial	<1%	33%
Transportation	<1%	<1%
Electric Power	<1%	22%
Other	<1%	<1%

Data Source: EIA

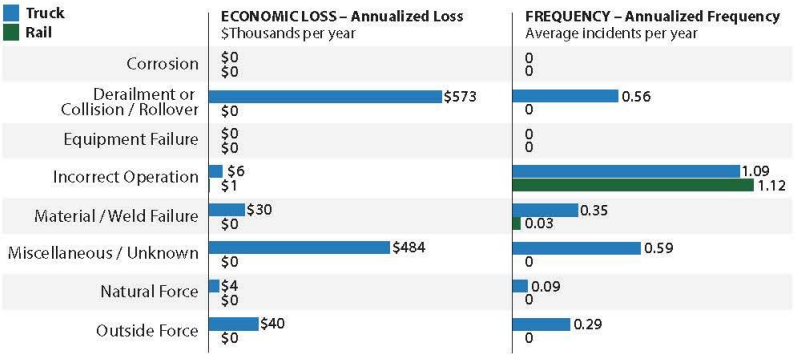
- Idaho has 0 natural gas processing facilities.
- Idaho has 2 liquefied natural gas (LNG) facilities with a total storage capacity of 176,666 barrels.

PETROLEUM


CANADA
WA
MT
OR
WY
NV
UT
Great Salt Lake
Boise
Idaho Falls
Pocatello
Twin Falls
Miles
0
50
100
Petroleum Terminals
Storage Capacity (Thousand Barrels)
50 - 250 Mbbl
251 - 750 Mbbl
751 - 1,500 Mbbl
1,501 - 3,000 Mbbl
3,001 - 6,500+ Mbbl
Biorefinery (Ethanol)
Petroleum Refinery
Crude Pipelines
Refined Product Pipelines
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2021

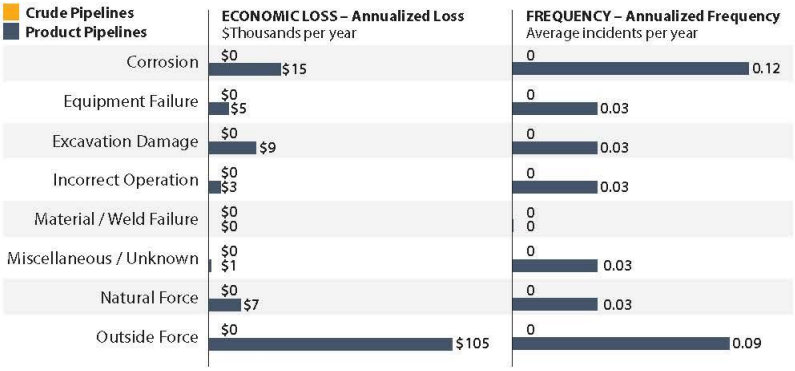
Petroleum Transport

Top Events Affecting Petroleum Transport by Truck and Rail, 1986–2019



Data Source: DOT PHMSA

Top Events Affecting Crude Oil and Refined Product Pipelines, 1986–2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *11 miles of crude oil pipelines*
  - *648 miles of refined product pipelines*
  - *0 miles of biofuels pipelines*
- 94% of Idaho's petroleum pipeline systems were constructed prior to 1970 or in an unknown year.
- Between 1986 and 2019, Idaho's petroleum supply was most impacted by:
  - ***Derailments, Collisions, or Rollovers*** *when transported by truck (8th leading cause nationwide at $0.07M per year)*
  - ***Incorrect Operations*** *when transported by rail (4th leading cause nationwide at $2.02M per year)*
  - ***Outside Forces*** *when transported by product pipelines (leading cause nationwide at $19.06M per year)*
- Disruptions in other states may impact supply.

Petroleum Refineries

- There are no operating petroleum refineries in Idaho.

Appendix C. Critical Infrastructure

Energy is the basis of operation for much of the critical infrastructure. According to the U.S. Cybersecurity and Infrastructure Security Agency.[1] Sixteen sectors are classified as critical infrastructure in the U.S. Those sectors are listed below and many of them are present in Idaho:

1. Chemical Sector
   a. Basic chemicals
   b. Specialty chemicals
   c. Agricultural chemicals
   d. Pharmaceuticals
   e. Consumer products
2. Commercial Facilities Sector
   a. Entertainment and Media
   b. Gaming
   c. Lodging
   d. Outdoor Events
   e. Public Assembly
   f. Real Estate
   g. Retail
   h. Sports Leagues
3. Communications Sector
4. Critical Manufacturing Sector
   a. Primary Metals Manufacturing
   b. Machinery Manufacturing
   c. Electrical Equipment, Appliance, and Component Manufacturing
   d. Transportation Equipment Manufacturing
5. Dams Sector
6. Defense Industrial Base Sector
7. Emergency Services Sector
   a. Law Enforcement
   b. Fire and Rescue Services
   c. Emergency Medical Services
   d. Emergency Management
   e. Public Works
8. Energy Sector
9. Financial Services Sector
10. Food and Agriculture Sector
11. Government Facilities Sector
12. Healthcare and Public Health Sector
13. Information Technology Sector
14. Nuclear Reactors, Materials, and Waste Sector
15. Transportation Systems Sector
    a. Aviation
    b. Highway and Motor Carrier
    c. Maritime Transportation System
    d. Mass Transit and Passenger Rail
    e. Pipeline Systems
    f. Freight Rail
    g. Postal and Shipping
16. Water and Wastewater Systems Sector

[1] U.S. Cybersecurity and Infrastructure Security Agency, "Critical Infrastructure Sectors," *available at* **https://www.cisa.gov/critical-infrastructure-sectors.**

Appendix D. Public-specific Appendices

Table D- 1. Energy Emergency Contact List

ORGANIZATION	EMERGENCY LINE OR GENERAL CONTACT
General Emergency number	9-1-1
Dig Line (before digging with any energy source)	8-1-1
OEMR (ID-ESF #12)	208-332-1660
ELECTRICITY AND NATURAL GAS	
Idaho Power	800-488-6151
Avista	800-227-9187
Rocky Mountain Power / PacifiCorp	877-508-5088
Municipal and cooperative utilities	
Intermountain Gas	800-548-3679
Williams Northwest Pipeline	800-972-7733
Dominion/Questar	800-767-1689
Transcanada GTN system	800-447-8066
PETROLEUM	
Yellowstone Pipeline Co. (Conoco, Exxon, Sunoco)	877-267-2290
Northwest Product Pipeline (Tesoro Logistics / Marathon Pipeline LLC)	833-675-1234 800-865-1044
County and tribal emergency managers:	https://ioem.idaho.gov/about/contact/county-tribal-emergency-managers-contacts/

Appendix E. Idaho Emergency Operation Plan

The most recent version of the Idaho Emergency Operation Plan can be found on the Idaho Office of Emergency Management's website (www.ioem.idaho.gov) and the 2019 version is available via this link: https://ioem.idaho.gov/wp-content/uploads/sites/57/2020/07/2019-Idaho-Emergency-Operations-Plan.pdf

The following information provides an abridged overview of the 2019 Idaho Emergency Operation Plan, Emergency Support Function Annex #12: Energy (ID-ESF #12).

I. Purpose

The purpose of the ID-ESF #12 is to:

- Coordinate the restoration and protection of Idaho's critical electricity, natural gas, and transportation fuel infrastructure
- Provide a systematic framework for managing energy emergencies and for preventing shortfalls from escalating to crisis situations whenever possible.

The ID-ESF #12 Coordinator and Primary Agencies work closely with Support Agencies, Local Government, Private Sector, Other Suppliers, and Federal Agencies to gather, assess, and share necessary information on energy system damage. The governmental agencies assigned to perform ID-ESF #12 work with utilities to evaluate the full impact and interdependencies of energy system outages in the State. Additionally, implementation of the ID-ESF #12 can assist utilities, State, and Local Governments if combined efforts are required to restore energy systems.

II. Scope

ID-ESF #12 addresses the response and recovery efforts dealing with significant disruptions in energy supplies for all hazardous emergencies. Specifically, it:

- Is applicable to transporting, generating, transmitting, conserving, building, and maintaining bulk systems for electricity, natural gas, and transportation fuels.
- Is not applicable to emergency electricity (refer to ID-ESF #3).
- Should be implemented upon notification of a potential for, or occurrence of, a major disaster or emergency that affects the critical infrastructure energy systems in Idaho.

The Idaho Public Utilities Commission (IPUC) is the designated ID-ESF #12 (Energy Emergencies) Coordinator. The Idaho Office of Energy and Mineral Resources (OEMR) is the State's ID-ESF #12 Primary Agency, and it supports the IPUC in performing ID-ESF #12. The IPUC and the OEMR will work closely with State and Federal Agencies, including Idaho Office of Emergency Management (IOEM) and the U.S. Department of Energy (DOE), in sharing energy emergency and shortage information and seeking technical support. The roles and responsibilities of Public Utilities and Other Suppliers of energy in Idaho are emphasized to provide information, conduct assessments, prioritize their response and restoration efforts, and conduct restoration efforts. The ID-ESF #12 Coordinator and Primary Agencies are required to receive timely and accurate information from all affected energy suppliers in Idaho if an energy emergency arises.

III. Concept of Operations

a. General

Energy-facility owners and operators are primarily responsible for restoring normal operations at their facilities. ID-ESF #12 Coordinator, Primary, and Support Agencies provide supplemental State assistance and resources to facilitate restoration in a timely manner. Key functions under ID-ESF #12 are as follows:

- The IPUC will serve as the Coordinating Agency within the State Government for receipt of information on actual or potential damage to energy supply and distribution systems, and on procedures for preparedness, prevention, recovery, and restoration
- The OEMR, as Primary Agency, will assist the IPUC in planning, executing, and reconciling the above-mentioned activities.
- The Support Agencies will provide the IPUC and OEMR with the specified capabilities or resources to support the mission.
- Public Utilities and Other Suppliers of energy in Idaho
  - shall be responsible for activating emergency response plans and appropriately allocating resources, personnel, equipment and services to maintain or restore energy service under their control.
  - will provide the IPUC and OEMR with the specified capabilities or resources to support the mission identified in Sections II and III.

b. Initial Actions for Coordinator, Primary, and Support Agencies

Communication and Coordination:
Establish lines of communication and coordination with the Idaho Response Center (IRC) (formerly known as the Emergency Operations Center) and ID-ESF #12 actors listed above to mitigate the effects of the disaster and enhance recovery.

Damage Assessment:
Assess the energy emergency to gather accurate and useful information, such as:

- The energy type resource involved/affected (i.e., electricity, natural gas, etc.)
- The type of energy emergency (i.e. outage, shortage)
- The energy system critical infrastructure involved/affected (i.e. pipeline, transmission line, energy facility, etc.)
- The geographic area involved/affected
- All possible interdependencies affected
- Business, industry, institutions, and/or government operations, and the public affected
- The magnitude of the damage or problem and estimated shortage/outage timeframe
- The estimated restoration timeframe, if possible.

This information can be utilized to establish situation awareness and to communicate the emergency response efforts as they develop with the Web Emergency Operations Center (WebEOC) and other appropriate resources.

Response Actions:
The Coordinator, Primary, and Support Agencies will work with applicable State and Local Emergency Management Officials and private industry response personnel to:

- Assist with the identification and coordination of temporary, alternate, or interim energy solutions/sources of natural gas, electricity, and transportation fuels
- Identify requirements and establish priorities to repair damaged energy systems
- Develop an objective-based action plan to respond and recover from the energy emergency
- Coordinate the implementation of proposed response actions with the IRC
- Coordinate the distribution, conservation, curtailment, and restoration of Idaho's energy resources as needed

Public Information:
The Coordinator, Primary, and Support Agencies will work closely with ID-ESF #15 Public Information and External Affairs, to help ID-ESF #15 develop press releases or other public information and data relating to:

- Estimations on the impact of energy system outages within affected areas, estimated outage time, estimated restoration time
- What the public should do, including recommendations for meeting basic survival needs as related to the energy sector

Appendix F. State agency-specific appendices - Energy emergency contact list and contact order

Appendix F has been redacted from publicly available versions of the 2022 Idaho Energy Security Plan to protect privileged and confidential information.

Appendix G. Idaho Emergency Fuel Shortage Plan

The most recent version of the Idaho Emergency Fuel Shortage Plan (Plan) was published in 2008 and can be found at the Idaho Office of Energy and Mineral Resource's (OEMR) office in Boise. This Plan is not accessible online. OEMR is actively updating the Plan.

The following information provides an abridged overview of the 2008 Idaho State Energy Assurance and Emergency Standard Operations Procedure Plan (Petroleum).

PURPOSE

The plan is intended to lessen the potential adverse impacts of a petroleum shortage or emergency by providing the Governor with accurate and timely information for decision-making. As a basis for decision, it provides an overview of petroleum use in Idaho and possible risk scenarios. It also provides a documented process to coordinate the protection and restoration of Idaho's petroleum fuel supply levels that are critical to saving lives and protecting public health, safety and property. This plan specifically attempts to provide a process for logistical recovery from any petroleum incident that would precipitate a shortage of needed motor fuel and other petroleum resources.

The plan relies upon a mixed strategy response to a petroleum shortage, using a free market approach with government intervention only to the extent necessary to protect the interests of public health, safety and welfare. Activation of the management and information system and the implementation of actions described most specifically under Section V., Petroleum Shortage and Emergency Response, occur only when a petroleum emergency directly or indirectly threatens the life safety and health of Idaho citizens or the natural environment or when a supply shortage substantially disrupts Idaho's economy and normal operation. Activities such as supply monitoring are ongoing, as emergencies may not only manifest as a single point disaster but through a disruption of critical services such as security, healthcare and food distribution.

The plan seeks to provide a clear and simple process that will achieve results in a time frame appropriate to the level of shortage or emergency experienced. Actions under this plan need to be obvious and achievable through the efforts of agencies designated by the Idaho Governor's Office such as the Idaho Bureau of Homeland Security and the Office of Energy Resources[61] and through other government agencies or private market concerns as necessary.

The primary responsibility of the state government is to gather, assess, and share information on petroleum system damage and estimations of the impact of petroleum shortfalls within affected areas. Additionally, the Idaho Bureau of Homeland Security will work closely with local petroleum suppliers and deliverers to facilitate restoration and protection efforts. The emergency response activities addressing petroleum emergencies and shortfalls will be implemented to correspond with the level of severity. This plan provides a simple and systematic framework for actions to be taken should a petroleum shortage or emergency occur (see mitigation strategies page 22). The emergency response identifies implementation during each phase of an event.

[61] The Idaho Bureau of Homeland Security is now the Idaho Office of Emergency management. The Office of Energy Resources is now the Idaho Governor's Office of Energy and Mineral Resources.

The plan also provides information and guidelines delineating protocols that can be viewed by interested parties, industry and executors, in an effort to understand the way in which the state will address a petroleum emergency. These protocols, listed below, are expanded under this plan in Section IV -Supply Monitoring and Shortage Avoidance and Section V -Petroleum Shortage and Emergency Response.

Section IV

- Monitoring Petroleum Supplies and Issues and Trends that Affect the Idaho Supply
- Preparation of Strategies for Possible Supply Shortage

Section V

- Petroleum Emergency Response
  - General approach to the emergency response
  - Actors, roles and responsibilities
  - Actions
- Petroleum Emergency Recovery

Idaho's use for petroleum is in the private and public sectors and includes transportation, agriculture, residential and commercial heating oil and some commercial/industrial processes as varied as mining and road building. Idaho does not utilize petroleum for electric generation.

December 2007 stocks of motor gasoline were 252 thousand barrels -a 0.04 percent share of U.S. stock. Distillate fuel oil stock (excluding pipelines) was 258 thousand barrels as of December 2007 -a 0.03 percent share of U.S. stock.

There are no petroleum refineries in Idaho and no crude stocks enter the state.

Appendix H. State of Idaho Hazard Mitigation Plan (updated in 2020 with dam failure)

The most recent version of the State of Idaho Hazard Mitigation Plan can be found on the Idaho Office of Emergency Management's website (www.ioem.idaho.gov) or via this link: https://ioem.idaho.gov/preparedness-and-protection/mitigation/state-hazard-mitigation-plan/

The following information provides excerpts of the 2018 State of Idaho Hazard Mitigation Plan, Executive Summary. This plan was updated in 2020 to include dam failure.

Executive Summary

In a time of growing challenges and fiscal constraint, we must advance mitigation planning that saves lives, reduces injuries, and decreases financial losses. This plan serves as the strategy document for Idaho's Hazard Mitigation Program. Idaho's State Hazard Mitigation Plan (SHMP) identifies the hazards affecting Idaho, analyzes risks and vulnerabilities, determines potential losses, and develops strategies to reduce impacts. Mitigation measures range from public education and land use planning to specific construction actions that reduces hazard losses. The SHMP is revised every five years in compliance with appropriate laws and regulations.

The 2018 revision to the 2013 SHMP improves scientific information on natural hazards and human-caused threats, incorporates the Idaho Multi-Hazard Risk Portfolio (IMHRP) into the State's risk assessment, updates disaster events, and summarizes vulnerability assessment information by county and Tribal Nation. Data sources include a State-building (owned and leased) spatial inventory for an in-depth review of State asset vulnerability to identified hazards, an updated and expanded critical facility spatial dataset, as well as U.S. Census block level aggregate building inventory and demographic data for loss estimation. The SHMP provides strategic direction to mitigate hazards, identifies potential funding resources, and guides decision makers in prioritizing assistance to local entities.

Hazard information from 47 Tribal and county all-hazard mitigation plans are integrated into the SHMP. With the support of various federal and state agencies, local officials, the State of Idaho, and the Federal Emergency Management Agency (FEMA), the SHMP is a resource to guide the State toward greater disaster resilience.

The strategic section of the SHMP includes the State of Idaho's hazard mitigation goals:

1. Save lives and reduce public exposure to risk from natural, technological, and human-caused hazard events.
2. Reduce or prevent damage to public and private property from natural, technological, and human-caused hazard events.
3. Enhance coordination between Federal, State, Tribal, regional, local agencies, and non-governmental organizations and consistency of hazard impact reduction policy.
4. Reduce the adverse economic and environmental impacts of natural, technological, and human-caused hazard events.
5. Enhance vulnerability and risk assessments through the development and collection and analysis of data.

The State evaluates potential losses and prioritizes mitigation actions based on the risk and vulnerability assessments. The SHMP analyzes risk by determining each hazard's vulnerability, impact, and to what degree they can be found in our environment. Updated techniques to understand potential damages,

loss, and impacts to assets and capabilities are used in the SHMP. The 2018 SHMP profiles 13 hazards and threats: flood (including dam/levee/canal failure), wildfire, earthquake, landslide, avalanche, drought, severe storm (including lightning, hail, and wind/tornado), volcanic eruption, cyber disruptions, pandemic, radiological, civil disturbances, and hazardous materials. While human-caused threats as described in the Idaho Threat and Hazard Identification and Risk Assessment (THIRA) are not required by FEMA to be included in state hazard mitigation plans, it is suggested and considered prudent to include all hazards. The SHMP and the county multi-jurisdictional all-hazard mitigation plans contribute to the THIRA risk assessments.

During the 2018 SHMP update, the three natural hazards which ranked highest are:

- Wildfire; Flood; Severe Storms

In the past five years, Idaho has declared nineteen State disasters resulting in six Federal declarations from floods and severe weather, and seven Fire Mitigation Assistance Grants (approved by the FEMA Regional Administrator) for wildfires. Recent disasters have damaged property, caused injuries and death, and interrupted business and government services. The toll on individuals, families, and businesses can be immense. The time, money, and effort to respond to and recover from these disasters divert shrinking public resources and attention from other important programs and issues.

Since 2013 significant mitigation actions have been completed in Idaho. Nearly $16.5 million in combined federal funding has been awarded for projects such as upgrading infrastructure to make it more resilient from flooding (bridge and culvert upsizing, storm water management systems), wildfire mitigation projects (fuels reduction, outreach, etc.), volunteer fire assistance, hazard warning systems, and seismic research and mapping. National studies indicate that investments in hazard mitigation will pay dividends in the future – for every dollar spent on a hazard mitigation activity, there are six dollars in losses avoided.

The Idaho Office of Emergency Management is dedicated to fostering a culture of preparedness centered on risk and resilience. The SHMP focuses on understanding the risks we face; collaboration to recognize the interdependent nature of the economy, health and social services, housing infrastructure, and natural and cultural resources; and empowering communities to take actions that put them in the best position to bounce back quickly and effectively when disasters occur. Resiliency covers the capabilities necessary to reduce the loss of life and property by lessening the impact of disasters. The 2018 mitigation strategy to achieve resilience includes the valuable role of local leadership, collaboration among various parts of the whole community, and education to ensure the capabilities continually develop.

Appendix I. Western Petroleum Shortage Response Collaborative (WPSRC) – Collaborative Regional Framework and Collaborative Development Guide

The Western Petroleum Shortage Response Collaborative (WPSRC) initiative was formed and led through a partnership between DOE, the National Association of State Energy Officials (NASEO), the National Emergency Management Association (NEMA), and Hagerty Consulting. The WPSRC was created to facilitate the coordination and development of a regional catastrophic fuel response framework among a subset of western states' emergency management and energy offices. This initiative is a state-driven acknowledgment of the need to work together and share resources to best address state and regional petroleum shortage preparedness and response needs. Additionally, this effort satisfies the recommendations put forth by federal statutes (Energy Policy and Conservation Act, Section 363, 42 U.S.C. 6322(e)) that encourage regional coordination.

WPSRC states include:

- Alaska
- Arizona
- California
- Colorado
- Idaho
- Montana
- Nevada
- Oregon
- Utah
- Washington
- Wyoming

The purpose of the WPSRC Regional Framework is to codify guidance for coordinated response, prioritize response actions and measures, standardize information flows, and pre-identify tools and templates that may be necessary to respond to a petroleum shortage.

The following information provides an abridged overview of the WPSRC Collaborative Regional Framework. This material is based on work supported by the U.S. Department of Energy (DOE), Office of Cybersecurity, Energy Security, and Emergency Response (CESER) under Award Number DE-OE0000748.

Waiver of the Federal Motor Carrier Safety Administration Safety Regulations (FMCSR)

This program is automatically triggered for the majority of states under a declared state of emergency and typically does not require additional actions by states to implement. States may have additional legislation or rules that requires state-specific approvals. States should be familiar with the operating procedures and necessary approvals within their states. The program waives the FMCSA safety rules which include limits on the number of hours a driver can operate. This allows drivers to make more fuel deliveries and allows fuel to be transported over longer distances to help alleviate the shortage.

Template: Waiver of Select Regulations Covering Motor Carriers and Drivers

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Waiver of Select Regulations Covering Motor Carriers and Driver

Transporting [insert fuels covered by the order, e.g., gasoline, diesel fuel, propane, Number 2 home heating oil, etc.]

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide for the safe transportation of petroleum products within this State, and to assure that petroleum product supplies will remain sufficient to protect the health, safety, and economic well-being of the State's residents and visitors; and

WHEREAS, this declaration of emergency [disaster] is recognized by the Federal Motor Carrier Safety Administration (FMCSA) to cause and to place into immediate effect relief from Federal Motor Carrier Safety Regulations contained in 49 CFR Parts 390-399; and [if applicable, insert any corresponding or equivalent reference in state law].

WHEREAS, all of the safety regulations contained in 49 CFR Parts 390-399 are waived, including Driver Hours of Service; however, motor carriers are encouraged to comply with the safety regulations that do not otherwise restrict or impede their ability to assist in the recovery effort in the area for which an emergency has been declared.

NOW, THEREFORE, I, [insert governor's name], Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [insert legal reference to authorities], order the following:

1) A State of [Energy] Emergency [Disaster] is declared in the State of [insert state name] for [insert the names of the counties in which this declaration applies or specify that it is a statewide declaration].

2) Relief from Federal Motor Carrier Safety Regulations contained in 49 CFR Parts 390-399; and [if applicable, insert any corresponding or equivalent reference in state law as may be needed].

3) This order applies only to [insert fuels to be covered by this order, e.g., gasoline, diesel fuel, Number 2 home heating oil, propane, biofuels, etc.]. No other petroleum products or other fuels are covered by the exemption and suspension under this Order.

4) The relief from these regulations shall remain in effect for the duration of the emergency or thirty (30) days, whichever is less. Only the FMCSA Field Administrator can extend the thirty (30) day limit for an extension of relief from the federal safety regulations.

5) Nothing in this Order shall be construed as an exemption from applicable controlled substances and alcohol use and testing requirements (49 CFR Part 382 and [insert applicable state statute, order, and/or rule]), the commercial driver's license requirements (49 CFR Part 383 and [insert applicable state statute, order, and/or rule]), the financial responsibility requirements (49 CFR Part 387 and [insert applicable state statute, order, and/or rule]), applicable size and weight requirements, or any portion of federal and State regulations not specifically identified.

6) Motor carriers or drivers currently subject to an out-of-service order are not eligible for the exemption and suspension until the out-of-service order expires or the conditions for rescission have been satisfied.

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Petroleum Priorities for Essential Services Programs

This priority end-user program would require petroleum suppliers to provide sufficient liquid fuels to meet the needs of critical end-users such as first responders: law enforcement, fire, and emergency medical services, and any other essential service providers determined by the state or other legal authorities. This program should only be used in more serious, longer-term shortages. Use of this program requires the state to identify critical end users for priority service.

Template: Executive Order Essential Services Program

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Implementation of Priorities for Essential Services

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide priority to emergency responders for petroleum product supplies needed to protect the health, safety, and economic well-being of the state's residents and visitors.

NOW, THEREFORE, I [insert governor's name] Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [cite statute] upon declaration of a state of emergency in the Executive Proclamation [insert number] under this act, I, [insert governor's name], Governor, hereby implement a Priority End-User Program, [statewide, in the state of, or to become effective in the counties of] as set forth below on [insert time, month, day, year].

Priority End Users

Petroleum suppliers shall supply 100 percent of the current fuel requirements to emergency responders (law enforcement, firefighting units, and emergency medical services) upon certification. This certification, to be submitted from a priority end-user to their supplier, shall contain:

1) Statement of the most recent 12 months of purchases in gallons.
2) Anticipated requirements for each of the next 12 months.
3) Written justification explaining the need for any volumes in excess of historical or contractual purchases.
4) A sworn statement by the responsible party that the information contained in the certification is true and accurate and that the petroleum product to be provided will only be used for priority use as indicated by the emergency responders.

Suppliers will have ten (10) workdays to begin supplying a priority account with the current requirements upon submission of the certificate of need.

I hereby designate the [insert state agency name], as the state office responsible for the administration of this program. As such, the [insert state agency name] shall provide for a mechanism that will allow for the resolution of any dispute arising out of the imposition of the Priority End-User Program.

Violation of Order

Any person who knowingly violates this directive is guilty of a [insert any penalties that may be provided by state law. For example, this might be "a misdemeanor punishable by a fine of not more than [insert number of dollars]. Each day a violation continues is a separate offense. The Attorney General or a Prosecuting Attorney of a county may bring an action in a court of competent jurisdiction to prevent a violation of this order or to compel a person to perform a duty imposed on the person under this Executive Order.

Duration of Order

This order shall remain in effect for [insert number of] days from its effective date unless amended, superseded, or rescinded by further Executive Order [or Proclamation]. It shall expire in [insert number of] days after the proclamation of a state of emergency unless extended as provided for in [insert reference to the statute under which this action is based. Alternatively, it could say until such time as supply conditions improve and the plan is no longer needed and the governor issues an order rescinding the plan.].

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Template: Priority End-Use Certificate Form

Department of: [Insert Name]
[Insert Agency Name] [Insert Agency Address]
CERTIFICATE OF PRIORITY END-USE Please Print or Type - Application Must Be Legible and Signed. Return To Above Address.

Part 1: Identification

1. Date of Request:			
	Month	Day	Year
2. EIN Number:			
3. Name of Company / Applicant Submitting Request: *(Last name first if individual)*			
4. Mailing Address of Company / Applicant: *(Street, City, State, Zip Code, County)*			
5. Name and Phone of Contact Person *(Including area code)*			
6. Name of Delivery Location *(If different from 4)*			

7. Applicant's Classification:

☐ a) Police Agency	☐ b) Fire Fighting Units	☐ c) Emergency Medical Services
☐ d) Other / Explain:		

Part II: Supplier / Supply Data

Supply Volumes for Requested Product: *(in Gallons)*		
Month:	Current Requirements:	Actual Purchases for the Last Twelve Months:

	Year:	Purchases:	Year:	Volume:
1) JAN				
2) FEB				
3) MAR				
4) APR				
5) MAY				
6) JUN				
7) JUL				
8) AUG				
9) SEP				
10) OCT				
11) NOV				
12) DEC				
13) TOTAL	-		-	

Part III: Supply / Supply data storage capacity

8. Supplier Information *(Enter the information requested below for each current supplier for motor gasoline. List on the first line the principal immediate supplier. If more than three, use an additional sheet.)*				
a) Name and Mailing *(Street)* Address	b) City, State and Zip Code	c) Supplier's Name	d) % of Volume	e) Name and Phone Number of Contact Person *(including area code)*

9. Justification of Volumes Requested *(Describe in detail the reasons justifying the requested volumes as normal and reasonable for intended use, and provide reasons why the product is needed. Use additional sheets as needed.)*

Part IV: Certification (To be completed by all applicants)

I hereby certify that all information submitted as part of this application is true, accurate and complete to the best of my knowledge, that any quantity requested for priority use will be used only for that requested use, and that an amended application for a downward base period adjustment will be filed if the need for the volume assigned pursuant to this application declines.

Name of Applicant or Company *(Official)*	Title of Applicant or Company *(Official)*	Signature	Date Signed *(Month Day Year)*

Template: Emergency Rule Procedure and Appeals Process

These rules take effect upon filing with the [insert name of the appropriate state agency should your state have a requirement for the filing of administrative rules].

By authority conferred on [insert state agency name], by the Governor upon the proclamation of an emergency and by Executive Order [insert number] on [insert month, day, year] under [insert full legal citation to the act and section of the act upon which this authority is based].

Finding of Emergency

By executive order the Governor has declared that a state of [energy] emergency exists. Under powers granted to the Governor during a declared state of energy emergency, Executive Order [insert number and year] was issued establishing a Priority End-User Program. In this order, the Governor designated [insert state agency name], as the agency responsible for the administration of this program. Further, it required a mechanism to resolve any disputes arising out of the use of this plan. The following rules are intended to outline an appeals procedure to provide this mechanism.

Delay in establishing rules of procedure to effectively carry out the duties delegated to the [insert state agency name] regarding the administration of the Priority End-User Program might well constitute a threat to the citizens of the state due to the lack of petroleum products. To avoid this threat and to assure that essential public needs are met [insert state agency name] finds the following rules are needed for the preservation of public health, safety, and welfare and that an emergency exists within the meaning of [insert the legal reference to the state law and executive order under which it is to be implemented].

Rule 1: Definitions

5) As used in these rules:

1. "Current requirements" means the supply of motor gasoline, distillate fuel oil and propane needed by an end-user or wholesale purchaser to meet its present priority end-use needs.
2. "Department" means the [insert state department name].
3. "Designated Supplier" (See Supplier below).
4. "Director" means the director of the [insert state agency name], or the designee thereof.
5. "Distillate Fuel Oil" means a general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as Number 1, Number 2, and Number 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as Number 1, Number 2, and Number 4 fuel oils are used primarily for space heating and electric power generation.
6. "End-User" means any person who is an ultimate consumer of a petroleum product other than a wholesale purchaser-consumer.
7. "Motor Gasoline" means a complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-

ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10-percent recovery point to 365 to 374 degrees Fahrenheit at the 90-percent recovery point. "Motor gasoline" includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline; but excludes aviation gasoline.

8. "Person" means an individual, corporation, firm, government unit, organization, or any other establishment whatsoever.
9. "Propane, Consumer Grade" means a normally gaseous paraffinic compound (C3H8) that includes all products covered by Natural Gas Policy Act specifications for commercial use and HD-5 propane and ASTM Specification D 1835. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It does not include the propane portion of any natural gas liquid mixes, e.g., butane-propane mix.
10. "Supplier" means a firm, or a part or subsidiary of a firm (not including the U.S. Department of Defense) that presently or during the last 12 months supplies, sells, transfers, or otherwise furnishes, such as by consignment, motor gasoline, distillate oil and propane to wholesale purchasers or end-users, including but not limited to refiners, importers, resellers, jobbers, or retailers.

Rule 2: Appeals - Petition; Stay Order; Response; Decision

6) person aggrieved by a certification of priority end-use may file a written petition of appeal to the [insert state name]. The petition shall include:

   1. Name and address of the petitioner.
   2. A concise statement of facts surrounding the case, including the reason for the appeal and relief sought.
   3. Names and addresses of persons known to petitioner who may be affected adversely by the outcome of the appeal. The petitioner shall attach a sworn statement to the petition that states that the information provided in the petition is true to the best of the petitioner's knowledge.

7) [Insert state agency name] shall, within three workdays after the filing of a petition, serve a copy of the petition on known persons who might be affected adversely by the outcome of the appeal. Persons served with a petition may, not later than five workdays from service of the petition, file a written reply, supported by a sworn statement to the effect that the information in the reply is true to the best of the respondent's knowledge. A copy of the response shall be made available to the petitioner.

8) Within 20 workdays after the petition of appeal is filed, the [insert state agency name] shall render a decision on the appeal and serve it upon all persons who participated in the appellate proceeding and any other person who is aggrieved by the decision and order. A person is deemed to have exhausted their administrative remedies once a decision has been rendered on the appeal.

License Plate Sequencing

Mandates that gasoline and/or diesel fuel will be dispensed to vehicle owners whose license plates end in an odd number only on odd numbered days of the month. Those with vehicle license plates that end in even numbers can purchase gasoline and/or diesel fuel only on even numbered days of the month. Personalized license plates and those without numbers will be considered as "odd numbered." Governors may implement this program by issuing and publicizing an executive order outlining the stipulations of the program. Please note, this framework references this program as "License Plate Sequencing" to accommodate for the varying policies within the WPSRC states. The program may be referred to as the "Odd/Even Program" in other states and in the NASEO guidance.

Template: Executive Order

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Implementation of Odd-Even Purchase Plan

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide priority to emergency responders for petroleum product supplies needed to protect the health, safety, and economic well-being of the state's residents and visitors.

NOW, THEREFORE, I [insert governor's name] Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [cite statute] upon declaration of a state of emergency in the Executive Proclamation [insert number] under this act, I, [insert governor's name], Governor, hereby implement a Priority End-User Program, [statewide, in the state of, or to become effective in the counties of] as set forth below on [insert time, month, day, year].

Odd-Even Gasoline Purchase Requirements

If a state has other unique means used in license plate identification, the following should be adapted to be consistent with the plate numbering and lettering used in the state.

At the retail level, gasoline (and/or) diesel fuel shall be dispensed into vehicles with a license plate ending in an odd number (1, 3, 5, 7 and 9) only on odd numbered days of the month (first, third, fifth, seventh, and ninth). Personalized license plates and any other license plates without numbers shall be defined as odd. Examples of odd day license plates are: BBB 1333, KBC 475, and BERTHA.

1) At the retail level, gasoline (and/or) diesel fuel shall be dispensed into vehicles with a license plate ending in zero or an even number (0, 2, 4, 6 and 8) only on even

numbered days of the month (second, fourth, sixth, eighth, and tenth (zero)). Examples of even day license plates are: BBB 020, RMP 768, and KBC 776.

2) If a vehicle license plate contains both letters and numbers and the last digit is a letter, the last or only number digit will determine whether sale of gasoline is eligible on an odd or even day. Examples of license plates containing letters as last digits are 123 FT (odd day), 764 NT (even day), and 468 GN (even day).
3) For any calendar month in which there are 31 days, and in February of a leap year, sales shall be made on the last day of the month without regard to the digits of the license plates.

Exemptions

Retailers must exempt the following types of motor vehicles from these regulations:

1) Police, fire, ambulance, or other emergency vehicles.
2) Buses, taxis, vanpools, or other commercial passenger carriers.
3) U.S. Postal Service vehicles.
4) Motorcycles or mopeds, and similar two-wheel vehicles.
5) Vehicles bearing out-of-state license plates.
6) Vehicles registered or operated by a person with a current valid driver's license from outside the area under the odd-even purchase plan.
7) Local, county, state, and federal government vehicles that provide essential services for the health, safety, and well-being of citizens.
8) Vehicles operating in an unusual emergency situation in the judgment of retailers.
9) Vehicles with license plates with handicap designation.

Violation of Order

Any person who knowingly violates this directive is guilty of [insert any penalties that may be provided by state law. For example, this might be something like a misdemeanor punishable by a fine of not more than [insert number of dollars].] Each day a violation continues is a separate offense. The Attorney General or a Prosecuting Attorney of a county may bring an action in a court of competent jurisdiction to prevent a violation of this order or to compel a person to perform a duty imposed on the person under this Executive Order.

Duration of Order

This order shall remain in effect for [insert number of] days from its effective date unless amended, superseded, or rescinded by further Executive Order. It shall expire [insert number of] days after the proclamation of a state of energy emergency unless extended as provided for in [insert reference to the statute under which this action is based. Alternatively, it could say until such time as supply conditions improve and the plan is no longer needed and the governor issues an order rescinding the plan.].

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

EPA Fuel Specification Waivers

This program allows temporary waiving of the U.S. Environmental Protection Agency's (EPA) regulations on diesel and fuel properties. In the event of a fuel supply emergency, the EPA and U.S. Department of Energy may waive requirements for fuel and fuel additives to increase fuel supply. Enacting this waiver requires close coordination between the EPA and state agencies. If a state has its own fuel specification requirements, they may also need to be waived for the EPA waiver to be effective.

Template: EPA Fuel Specific Waiver

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Implementation of Priorities for Essential Services

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide priority to emergency responders for petroleum product supplies needed to protect the health, safety, and economic well-being of the state's residents and visitors.

NOW, THEREFORE, I [insert governor's name] Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [insert legal reference to authorities], order the following:

[Insert the information on the specific waivers granted by the Environmental Protection Agency. If the fuel specifications that have been waived have been adopted as part of the state implementation program and adopted under rule or law, the governor will need to at this point include references to those specific rules or laws and also waive those provisions for the same duration as approved by Environmental Protection Agency.]

Duration of Order

This order shall remain in effect for [insert number of] days from its effective date unless amended, superseded, or rescinded by further Executive Order [or Proclamation]. It shall expire in [insert number of] days after the proclamation of a state of emergency unless extended as provided for in [insert reference to the statute under which this action is based. Alternatively, it could say until such time as supply conditions improve and the plan is no longer needed and the governor issues an order rescinding the plan.].

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Request Emergency Fuel from the Defense Logistics Agency

Under this measure, the Defense Logistics Agency (DLA) can leverage existing fuel transportation resources to reposition fuel stored at other US Department of Defense (DOD) installations in support of any US Northern Command disaster response. The DLA uses existing bulk fuel contracts to deliver and store energy products at National Guard locations and other designated refueling locations. The DLA can use this measure for fuel deliveries to resupply DOD or National Guard locations supported by existing DLA contracts. States including this measure as part of their petroleum contingency plans need to assess the petroleum supply situation in a disaster and determine fuels and quantities needed, delivery locations, and available storage capacities. This measure is usually only available when a federal disaster has been declared.

Request IRS Dyed Diesel Fuel Excise Tax Waiver

Under this measure, states can request that the Internal Revenue Service (IRS) temporarily waive the tax penalty for dyed diesel fuel to be sold for use on the highway, creating greater supply of useable fuel. Dyed diesel fuel is only for use in off-road vehicles or non-highway use, such as farm tractors, heavy construction equipment, home heating, and generators. The IRS imposes a highway excise tax of 24.4 cents per gallon on diesel fuel sold for on-road use; dyed diesel fuel used is not ordinarily subject to this tax. States can implement this waiver by coordinating with the IRS in the case of a major shortage. Additional information on the IRS Dyed Diesel Fuel Excise Tax Waiver can be found on CESER's Energy Waiver Library.

Waivers for State Weight Limits for Petroleum Tanker Trucks

Under a governor declared emergency declaration, weight limits for petroleum tanker trucks may be waived. Such measures would only apply on a state-by-state basis and should trucks have to go out of state for fuel supplies, they would be subject to weight limits in the states through which they would need to pass.

Public Information Programs

Provides the public with ways they can curtail their fuel use and requests for conservation. This could include issuing press releases, making information available on websites, outreach through social media, and public service announcements. These programs can be implemented using existing communications channels and resources in coordination with energy partners.

Establish Retail Gas Station Priorities for Essential Services

Prioritizes gas station supplies for essential services. In recent years, some state and local governments have become more reliant, or entirely reliant, on retail gas stations to meet their needs. Prioritizing gas station supplies for essential services may help ensure that essential public service needs can be met during a serious fuel shortage. In order to implement this measure, states must identify essential services to be prioritized and coordinate messaging related to prioritization. Please reference page 70 of the NASEO Guidance for States on Petroleum Shortage Response Planning for additional information on designating and establishing priorities for retail gas stations.

Appendix J. Summary of Laws and Regulations on Energy Security and Energy Emergency Planning

Executive

Idaho Code 40-310 authorizes the Idaho Transportation Board (ITB) to regulate access to state highways and close or restrict use when it is deemed necessary for the protection of the public or to protect the highway from damage.

Idaho Code 40-312 defines the powers and duties of the ITB. The Board may establish a statewide comprehensive plan for public transportation and prescribe regulations affecting state highways and turnpike projects and to enforce compliance.

Idaho Code 40-505 defines the powers and duties of the Director of the Idaho Transportation Department. The Director is the technical and administrative officer of the ITB and has supervision and control of all activities, functions, and employees of the department and shall enforce all provisions of laws relating to the department and regulations of the ITB.

Idaho Code 40-1201 makes the ITB responsible for the control, operation, and maintenance of the portions of bridges within Idaho that adjoin another state.

Idaho Code 46-1006 defines the powers and duties of the adjutant general at the IOEM. The adjutant general, in all disaster services, shall represent the governor, and on behalf of the governor, coordinate all activities of state agencies in disaster services.

Idaho Code 46-1008 defines the Governor's powers and responsibilities during an emergency. The Governor may issue executive orders, proclamations with the force and effect of law. The governor may declare a disaster emergency if s/he finds a disaster has occurred or a disaster or threat of disaster is imminent.

Idaho Code 46-1010 authorizes the Governor to make emergency or disaster service compacts with any state or province of Canada if it is desirable to meet problems of emergency or disaster planning, prevention, response, or recovery.

Legislature

Idaho Code 46-1008 allows the legislature, by concurrent resolution, to terminate a state of disaster at any time. If the legislature does terminate a disaster, the Governor shall issue an executive order ending the state of emergency.

Local Jurisdictions

Idaho Code 46-1009 requires each county to maintain a disaster agency or participate in an intergovernmental disaster agency that has jurisdiction over the entire county to facilitate the cooperation and protection of the county in disaster prevention, preparedness, response, and recovery.

Idaho Code 46-1011 provides the mayor or chairman of county commissioners, within their political subdivision, the sole authority to declare a local disaster emergency and such declaration will be promptly filed with the local county recorder. The purpose of the declaration of a local disaster emergency is to activate the response and recovery aspects of any local or intergovernmental disaster emergency plans and furnishing of aid and assistance.

Idaho Public Utility Commission

Idaho Code 61-509 authorizes the Idaho PUC to direct railroad corporations to increase the number of trains, cars, or motive power or change timing of trains or cars, change the time schedule for their running, or change the stopping places it thinks reasonable to accommodate, transport traffic or freight transported or offered for transportation.

Idaho Code 61-533 authorizes the Idaho PUC to declare an emergency, with or without notice, upon finding that an inadequacy or insufficiency of electric power and energy or natural or manufactured gas that threatens the health, safety, or welfare of citizens of Idaho.

Idaho Code 61-534 authorizes the Idaho PUC, upon declaration of an emergency, to require suppliers of electrical power and energy or natural or manufactured gas to curtail service in accordance with PUC approved curtailment plans.

Idaho Code 61-535 authorizes the Idaho PUC, upon declaration of an emergency, to order the curtailment of electric power and gas consumption by consumers as the PUC finds reasonable and necessary.

Idaho Administrative Procedures

IDAPA 11.13.01 incorporates federal regulations 49 CFR § 390.23 allowing a motor carrier or driver operating a commercial motor vehicle to apply for a waiver from regulations 49 CFR § 390 through 399 during an emergency.

Federal

49 USC 108 defines the powers and duties of the administrator at the Pipeline and Hazardous Materials Safety Administration (PHMSA). The administrator shall carry out duties and powers to protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce.

49 CFR 390.23 provides any motor carrier or driver operating a commercial motor vehicle to provide emergency relief during an emergency an exemption from regulations in 49 CFR 390 through 399, including but not limited to vehicle weight limits and hours-of-service of drivers. The exemption is only effective when a regional emergency has been declared by the President of the United States, the Governor of a State, or their authorized representative, a local emergency has been declared by a Federal, State, or local government official with the authority to declare an emergency, or the Federal Motor Carrier Safety Administration (FMCSA) has declared that an emergency exists that justifies an exemption.

49 CFR 390.25 authorizes the FMCSA to extend the 30-day time period of an exemption for a regional emergency after approval from the Regional Director in the region.

6 USC 313 defines the powers and duties of the administrator of the Federal Emergency Management Agency (FEMA). The administrator is responsible for working with State, local, and tribal governments, Federal agencies, emergency response providers, and nongovernmental organizations to build a national emergency management system to prepare for, protect against, respond to, recover from, and mitigate against the risk of natural disasters, acts of terrorism, and man-made disasters.

Appendix K. Updating the Idaho Energy Security Plan

Plan Maintenance Process

The oversight and maintenance of the Idaho Energy Security Plan (The Plan) is the responsibility of the Idaho Governor's Office of Energy and Mineral Resources (OEMR). OEMR coordinates the plan review and update processes, including documenting changes to this plan, distributing this plan to key stakeholders, submitting the updated plan for appropriate review, and storing a paper and electronic version of this plan for archival purposes.

Review and Evaluation Schedule

At a minimum, The Plan should be reviewed and revised on a biennial basis to ensure the documented preparedness and response activities reflect current policies, roles, and responsibilities. Additionally, out-of-cycle updates can be made to ensure changes to processes or policies are reflected in this plan, keeping the plan current between biennial reviews.

Evaluation Method

When appropriate, OEMR will complete an initial review of The Plan to identify potential updates or informational gaps. If an update is deemed necessary by OEMR, a lead coordinator from OEMR staff will be assigned primary responsibility to ensure The Plan review and update is conducted responsibly and completed on time. Once The Plan is reviewed and updated, OEMR must coordinate additional revision by the Idaho Strategic Energy Alliance (ISEA).

Revision Method

OEMR incorporates feedback identified by staff and make updates to improve consistency across The Plan. The Plan should be issued to coordinating agencies for review (one- to two-week review period). Any feedback from these agencies should be addressed as The Plan is prepared for the ISEA Board of Director's review.

Following the ISEA Board of Director's review, any requested updates are addressed by the lead coordinator, and once officially approved by the ISEA Board of Directors, The Plan and all supporting materials are submitted to the Governor for final review. Any requested updates from the Governor are incorporated and the final plan is published. The plan is then posted publicly via the OEMR website and distributed to coordinating agencies.

2022 Update Process

The 2022 Idaho Energy Security Plan evaluation and revision process involved an initial review, gap analysis against established emergency management planning guidance, a series of workshops with the National Association of State Energy Offices (NASEO) Energy Assurance Planning Working Group, plan updates and subsequent stakeholder reviews, and final review and approval by the ISEA Board of Directors. Key stakeholders were involved in the review process via the ISEA Reliability and Resiliency Task Force. Stakeholders were engaged in specific review based on the portions of the plan under review and defined roles and responsibilities. Feedback from these multiple engagements with stakeholders was incorporated in The Plan submitted to the ISEA Board of Directors for review in December 2021.

The 2022 Idaho Energy Security Plan updates and replaces in full the original Idaho Energy Security Plan that was published in August of 2012.